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PIGEON LAKE SUMMER COTTAGE SHORELAND USE

by



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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILMENT OF THE REQUIREMENTS

FOR THE DEGREE OF MASTER OF SCIENCE

DEPARTMENT OF GEOGRAPHY

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The undersigned certify that they have read,
and recommended to the Faculty of Graduate Studies for
acceptance, a thesis entitled " Pigeon Lake Summer Cottage
Shoreland Use", submitted by Robert Douglas Sabine in
partial fulfilment of the requirements for the degree
of Master of Science.

ABSTRACT

This thesis examines (1) the intensity of cottaging as a shoreland use, (2) the types of cottager recreational activity, (3) the land values and improvement values of property, (4) the socio-economic characteristics of the cottage owners, and (5) the relationships of the foregoing with the physical characteristics of eleven delineated cottage areas around Pigeon Lake.

The methods used to collect the research data for this study were site evaluation and a mailed questionnaire.

It was found that cottaging is an intensive recreational use of land but it provides recreation opportunity for only a small number of people in comparison to public use. It was concluded that for the best shoreland areas a combination of both public access and cottage development would provide the most effective use of the land resources available.

Proximity to water suitable for boating and swimming is the most important factor to the cottager. The quality of the beach is only of secondary importance. From this it was suggested that there be a change of inventory emphasis when classifying shoreland for cottaging for the Canada Land Inventory Capability Classification for Outdoor Recreation.

It was found that there is a direct relationship between the value of land, the cottager's opinion of the shoreland, and the time priority of recreation activities and the physical shoreland characteristics. There was no relationship, however, between the value of improvements and the physical shoreland characteristics.

A typical cottage owner lives in a city, is between thirty-five and sixty-five years of age, earns more than \$5,000.00 per annum, spends \$1,637.80 per annum owning and operating his cottage, is entirely satisfied with his chosen site, spends the majority of his time outside the cottage, and is looking for privacy, relaxation, a change of environment, and outdoor recreation near a good quality body of water which is close enough to home for him to be able to use it frequently.

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INTRODUCTION

Overall Objectives

The majority of man's experience and the events and situations that shape his way of life are becoming increasingly influenced by his leisure time activities. With the work week varying from five to six days and the average income of much of the population providing a standard of living beyond the basic necessities of food, clothing, shelter, and health care, the importance of recreation during leisure time has increased considerably over the past few years.

This study is concerned with one leisure time activity in the total panorama of recreation: cottaging. Little research has been done on this form of leisure time activity. Richard Ragatz¹, at the Recreation Researchers' Conference held in Syracuse (May, 1967) gave two reasons for this state of affairs. Firstly, cottaging is an activity which has not, in the past, been of interest to any level of government. Consequently, research in this sphere is seldom demanded for planning purposes. Only when

¹ Ragatz, Richard, An Approach to Analyzing the Vacation Home Market and Its Impact on a Rural Area, presented at Recreation Researchers' Conference, Syracuse, May 4th, 1967. (Mimeographed)

a group outside national, provincial, and municipal park administrative agencies becomes concerned with recreation activity is research demanded. Secondly, to obtain data on this area of recreational activity is both expensive and difficult.

Before defining the objectives of this study more precisely certain preliminary topics must be dealt with. They are:

- (1) the general nature of cottaging
- (2) current research

Definitions and Some Important Aspects of Cottaging

Wolfe defines the cottager as being "someone who owns, or rents, or lives in a summer cottage".² He goes on to define a cottage as "a building, large or small, elaborate or simple, that is almost always located on or near a body of water and in most cases is occupied only during the summer. If it is winterized, it can be occupied any season of the year, and sometimes becomes the owner's permanent home, but then it is no longer a cottage. The cottage is a place to which one resorts

²Wolfe, R.I., "About Cottages and Cottagers", Landscape, Autumn 1965, p.6.

during leisure hours, usually on vacation, sometimes only on weekends. It is, in a word, a form of recreational land use".

Variations of Wolfe's definition include reference to cottage use not only during weekends and vacations, but occasionally during the work week as well, where occupation and travel distance and time permit. Fine and Werner state that in addition to the owner's use of his private cottage he may also sublet the premises to someone else.³

Cottage recreation is, therefore, a form of recreational land use that is characterized by "seasonal housing",⁴ functionally and spatially related to the use of leisure time, and usually to a specific set of recreation activities.

There are at least four factors that affect the location of private cottages:⁵

1. Type and mix of recreation activities desired;
2. Travel time from home to cottage;

³Fine, I.V. and E.E. Werner, "Private Cottages in Wisconsin", Wisconsin Vacation-Recreation Papers, Vol. 1, No. 4, April 1960, Bureau of Business Research and Service, University of Wisconsin, Madison, p. 1.

⁴Loc. cit.

⁵Ibid., p. 2.

3. Income level of owner;
4. Accessibility and availability of desirable recreation resources.

These factors need not all operate at the same time or with the same intensity. Together, however, they are probably the main elements that condition the decisions of individuals and families to locate, purchase, or rent cottages in different areas.

The different kinds of locations of private cottage development can be classed into three broad categories on the basis of recreation activities, and hence the basic type of recreation resource:⁶

1. Water-oriented: swimming, fishing, boating, canoeing, water-skiing, sailing, hunting, hiking, collecting.
2. Upland-oriented: skiing, hunting, climbing, hiking, collecting.
3. Special Purpose Site: summer home, estate, farm, (many of these could hardly be classed as private cottages except from the point of view of spending leisure time).

⁶Loc. cit.

2. Weekend and vacation use: the zone within 150 miles.
3. Occasional day use: within a one hour drive, or less than 50 miles from the point of origin.

By definition there is a great deal of overlap in these categories since points or centres of origin will obviously differ for a number of the cottagers in any given area of development.

Cottaging as a form of recreation is carried on mainly by people from the larger urban centres. This has been observed by Baker⁹ in Saskatchewan and by Wolfe¹⁰ in Ontario. On the basis of observations made in the course of this study, it would appear that small centres of less than 5,000 population are beginning to generate increasing numbers of cottagers. However, the chief demand for cottage recreation opportunities will continue to originate in large centres where there are larger numbers of people earning an income that will afford the luxury of a summer home.

⁹Baker, W.M., Tourist and Outdoor Recreation Patterns and Prospects in the Qu'Appelle Valley and Last Mountain Lake, unpublished report, prepared for the Saskatchewan Department of Natural Resources and the Canada Department of Forestry, ARDA, 1965, p. 21.

¹⁰Wolfe, op. cit., p. 16.

Essentially the same factors (higher salaries, more leisure time, and increased mobility) that have contributed to the tremendous upsurge in all outdoor recreation activities are responsible for the rapid growth in cottage development. They are tied to the evolving social and economic structure in urban areas and to the opportunities and resources that have been made available technically, economically, and otherwise in rural areas. A particular set of values has been and is still developing around the cottage recreation concept.

Although there are no data available on the number of private cottages in Canada today, Wolfe estimated that there were 61,072 in 1941,¹¹ of which 2,569 were in Alberta (Table I). Swain suggests that the number of cottages in Ontario had increased to 119,000 by 1963.¹² This represents a 425 per cent increase over the 1941 estimate of 28,000. If this same percentage increase were applied to Alberta's 1941 estimate, 10,918 cottages would have existed in 1963. In the absence of more factual data, however, this figure must be regarded as strictly hypothetical.

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Wolfe, R.I., "Summer Cottagers in Ontario", Economic Geography, Vol. 27, No. 1, January, 1951, p. 11.

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Swain, op. cit., p. 9.

TABLE I
SUMMER COTTAGES IN CANADA, 1941

| | Canadian | | American | | Total | |
|----------------------|----------|------------|----------|------------|--------|------------|
| | Number | Percentage | Number | Percentage | Number | Percentage |
| Prince Edward Island | 88 | 87.1 | 13 | 12.9 | 101 | 100.0 |
| Nova Scotia | 2,130 | 81.3 | 491 | 18.7 | 2,621 | 100.0 |
| New Brunswick | 947 | 89.0 | 117 | 11.0 | 1,064 | 100.0 |
| Quebec | 16,185 | 96.9 | 515 | 3.1 | 16,700 | 100.0 |
| Ontario | 22,639 | 80.4 | 5,520 | 19.6 | 28,159 | 100.0 |
| Manitoba | 3,808 | 99.8 | 7 | 0.2 | 3,815 | 100.0 |
| Saskatchewan | 2,979 | 98.3 | 53 | 1.7 | 3,032 | 100.0 |
| Alberta | 2,561 | 99.7 | 8 | 0.3 | 2,569 | 100.0 |
| British Columbia | 2,927 | 97.4 | 78 | 2.6 | 3,005 | 100.0 |
| CANADA | 54,264 | 88.9 | 6,802 | 11.1 | 61,066 | 100.0 |

Wolfe, R.I., "Summer Cottagers In Ontario", Economic Geography, Vol. 27, No. 1, January, 1951, p. 11.

Three factors suggest that cottage recreation will continue to expand in future. (1) Technological innovations such as prefabricated cottage units and a variety of ancillary equipment facilitate cottage building and operation at relatively low cost. At the same time technology has enabled the cottage owner to maintain many of the basic urban amenities that he has grown to accept at home, in and around the cottage.

(2) Individual and family disposable incomes are increasing among the urban wage earners as well as the salaried occupational groups. The former are likely to follow the same pattern of activity and expenditure for recreation opportunities as the latter; that is, many will be seeking cottage sites.

(3) There is an increasing awareness on the part of governments of the importance of lakeshores for recreation, in terms of both cottage development and public beach development. These governments are beginning to realize that the only way to achieve maximum use of recreation waters and still meet the needs of the general public is to own the shoreland and effect proper zoning. Where this policy is presently being employed on Crown Land, cottage lots are being provided at relatively low

cost compared with the cost of purchase of privately owned sites in established cottage areas.

Current Research

The history of the events leading to this research on cottaging can be traced back to the 1961 Resources for Tomorrow Conference held in Montreal. It was recognized then that recreation was becoming an important aspect in the resource development of Canada, and that if judgements and decisions were to be made wisely in this regard a solid foundation of factual knowledge would have to be attained first. Three related lines of investigation were recommended to obtain this information:¹³

- (1) an inventory of land capability for outdoor recreation;
- (2) an inventory of existing recreation facilities;
- (3) basic research into various aspects of the recreation activity, the natural environment, and the people involved.

¹³Cressman, D.R. and D.W. Hoffman, "Classifying Land for Recreation", Journal of Soil and Water Conservation, May - June 1968, p. 91.

Land Capability Classification for Outdoor Recreation

The Canada Land Inventory (C.L.I.) was one of the first projects initiated under A.R.D.A. (Agricultural Rehabilitation and Development Act).¹⁴ The Land Capability Classification for Outdoor Recreation (known from here on as the Recreation Capability Inventory) is only one sector of the total C.L.I. program. The others are soil, forestry, wildlife, and present land use.

The Recreation Capability Inventory, as described in the Field Manual: Land Capability Classification for Outdoor Recreation, is designed to provide an overview of the quality, quantity, and distribution of natural recreation resources within the settled parts of Canada for the purpose of recreational resource planning at the regional, provincial, and national levels. The inventory operates within a seven class mapping system whereby all land (not water) is classified. Classes 1 and 2 are those with land of high capability; Classes 3 and 4 contain land of moderate

¹⁴A.R.D.A. is a Federal-Provincial Rural Development Agreement (1965-1970) facilitating the establishment of federal-provincial programs of alternate land use, soil and water conservation, rural development, and research, aimed primarily at alleviating the serious national problem of low income in rural areas.

capability; Classes 5 and 6 accommodate land of low capability; and Class 7 incorporates land of very low capability for supporting intensive outdoor recreation. Criteria for estimating the intensity of use are dealt with below. The sub-class notations denote recreational features or attractions that contribute to an area's potential for supporting intensive use. In all, 25 recreational features or sub-classes were recognized and defined in terms of their resource requirements (Table II).

The quantity of recreation generated and sustained per unit area under perfect market conditions is the basis for the capability classification system. This can be expressed as numbers of people per unit area at peak load, or in maximum number of use units (e.g. visitor-days per year).

Shorelands generally rank higher than uplands because of the intensive use capability of beaches and the popularity of shore and beach activities. Good to excellent beaches with useful backshore conditions rate Classes 1 or 2, depending on quality and size criteria. Where beaches are capable of supporting only moderately intensive use or where associated backshores are suitable

TABLE II

SYMBOLS INDICATING RECREATION CAPABILITY FEATURES

| | |
|------------------------------|--------------------------------|
| A - Angling | O - Upland Wildlife |
| B - Beach | P - Cultural Landscape Pattern |
| C - Canoe Tripping | Q - Topographic Patterns |
| D - Deep Inshore Water | R - Rock Formations |
| E - Vegetation | S - Skiing Areas |
| F - Waterfalls and Rapids | T - Thermal Springs |
| G - Glacier | U - Deep Water Boat Tripping |
| H - Historic Site | V - Viewing |
| J - Gathering and Collecting | W - Wetland Wildlife |
| K - Organized Camping | X - Miscellaneous |
| L - Landforms | Y - Family Boating |
| M - Small Surface Waters | Z - Man-Made Features |
| N - Lodging | |

NOTE: The symbols S and U have the dual role of indicating the shoreland or upland nature of a land unit (as is the case when positioned immediately after the Class number: i.e., 1SBKY or 5UQPE) as well as indicating a feature symbol. Positioning of the symbol determines the meaning. Only in a very limited number of instances will one find the same symbol used twice in one classified unit of land. An example is the Red Deer ski hill on the west bank of the Red Deer River Valley which is classified as 3SSAK. The first S symbol, immediately following the Class number (3), denotes a shoreland unit. The second S symbol denotes skiing capability.

for intensive cottage developments, shorelands will rate Class 2 or 3. Shorelands that lack the capability to support swimming or boating activities drop to the level of uplands.

On uplands and low quality shorelands the variety of activities possible and the landscape quality in terms of scenery, topography, natural history phenomena, and other attractions determine the rating. Poor quality shorelands and good to fair quality uplands suited to extensive uses will rate Classes 4 and 5. Class 6 lands have very limited capability even for extensive uses, while Class 7 lands have almost no capability.

There are three important characteristics of the system that should be mentioned. Firstly, only shorelands and uplands are rated: lakes and rivers (i.e. the water bodies themselves) are not. Secondly, land areas are not rated for their potential to support each type of recreational activity. Instead, each land-unit's rating designates its capability to support recreation in general. Thirdly, this capability system, at its present level of generalization, is not intended to be the basis for detailed recreational site planning within any given region. It is intended to make possible the identification of areas that

warrant more intensive study which in turn might lead to detailed site planning.

The mapping of the recreational capability of an area is begun by studying its air-photo coverage. During this procedure large areas of moderate to low recreational capability are blocked out on 1:50,000 topographic maps and areas of high capability are noted on the basis of changes in landform patterns. Photo interpretation is followed by field work where all high capability areas, uncertain features, and unit boundaries are checked.

Water quality, temperature, and depth together with fish populations are all considered in the final evaluation of shoreland capability. Similarly, upland wildlife surveys, climatic data, geologic surveys, and historical records help determine the recreational capability of upland areas.

Although soils are seldom a critical factor in determining recreational potential, they do influence capability rating, as certain basic soil characteristics are closely associated with certain outdoor recreational conditions. Most important are the characteristics of the sandy soil regions which can be readily related to areas that have high frequencies of Class 1 and 2 beach conditions.

Characteristics that limit an area's capability for recreation are also apparent: severe boulder conditions in the surface soil, stony till on shorelands, impermeable hardpan layers or other natural drainage restrictions, surface erosion hazards, flooding conditions, and inability to support and sustain a vegetative cover.

Outdoor Recreation Facility Inventory

The Outdoor Recreation Facility Inventory (known from here on as the Facility Inventory) is designed to complement the Recreation Capability Inventory by providing a comprehensive overview of all existing outdoor recreation facilities from which governmental decisions on recreation planning and developments, whether by public or by private agencies, can be made at the regional, provincial, and national levels.

The major objective of the inventory is to compile factual data on the present supply of outdoor recreation facilities in Canada. The specific task is to identify and map those land and/or water areas presently supporting some specifically recognized outdoor recreation activity by way of a man-made or man-controlled facility.

An inventory form is the basic method utilized to secure the information required about a particular facility.

It is a standard form containing items about which information is to be collected. The forms are carried and filled out by a trained person. This procedure is preferred to the mailing of questionnaires for the following reasons.¹⁵

- (a) It is possible to achieve a greater degree of uniformity, comparability of results, and inventory completeness.
- (b) A lengthier questionnaire would be required if the mailing technique was used due to the necessity of added explanatory passages. Such a lengthy questionnaire in turn would be likely to result in a low response rate.
- (c) With the mailing technique, a relatively high percentage of the returned questionnaires would have to be

¹⁵These reasons and subsequent decisions were the result of several Federal-Provincial discussions and meetings held during the period January - June, 1968.

discarded due to the omission of essential items and misinterpretation of questions. In addition, it would be difficult in some instances to verify the validity and reliability of the responses.

The majority of the information is collected from a central agency connected with that particular type of facility (e.g. parks, highway campsites, golf courses). Some field work is required for the more recent facilities, but this is limited.

The mapping procedure is a very simple step denoting the areal extent of facilities exceeding 10 acres in size.

To conclude these first two sections then, it is appropriate to say that the recreational capability maps identify those areas capable of supporting recreational developments, and the facility inventory forms identify those areas already supporting a recreation facility. It must be remembered that neither inventory is a suitability or a feasibility study. With this in mind, their greatest value will be found in assisting agencies in formulating recreational development and management policies and programs.

Research

Research, as the third recommended line of investigation for obtaining information on the various aspects of recreation, can be divided into two areas of endeavor.

(a) As mentioned earlier, the Canada Land Inventory is only one program within the total spectrum of ARDA (Agricultural Rural and Development Act). The information available from the C.L.I. maps showing capability for forestry, agriculture, recreation (capability and facility), wildlife (waterfowl and big game), and a fifth series illustrating present land use, combined with existing information on the serious economic problems in Canada will enable administrators to designate areas that call for more detailed research. The objective is to enable federal and provincial governments to undertake jointly, physical, social, and economic research concerning any of the projects or programs under the ARDA Agreement (1965-1970).

Approved projects or programs under this Research Section of the Agreement are selected from the following categories:

- (1) surveys, studies and investigations aimed at establishing criteria and priorities for action under ARDA and assisting in the solution of rural problems and to develop programs and projects that qualify for cost-sharing under this Agreement;
- (2) the formulation of Comprehensive Rural Development Plans;
- (3) pilot action research specifically designed to test new program approaches to the solution of rural problems and the improvement of rural standards of living not allowed for in other sections of this Agreement. Such projects will terminate at an agreed time and participation in them shall not obligate Canada to participate in any extension of the project thereafter, nor in any additional projects of this type;
- (4) studies aimed at determining the feasibility of any project aimed at improving the income level or employment opportunities of rural people.¹⁶

(b) The second purpose of research is to test the validity of and/or investigate various aspects of the Land Capability Classification for Outdoor Recreation. The following is an excerpt from the Field Manual for the Recreation Capability Inventory.

¹⁶

Canada, Department of Forestry, Agricultural Rural and Development Act: Federal-Provincial Rural Development Agreement, Catalogue No. Fo 60-266, Ottawa, 1966, p. 12.

"... we [the individuals involved in contributing to the Land Capability Classification for Outdoor Recreation] do not claim to have achieved the ultimate [in recreation classification]. The vast field of recreation research, on which later inventories will be based, has barely been broken. Though more sophisticated, errors of commission and omission will still exist and criticism, comments, and suggestions for improvements in the classification will be most welcome."¹⁷

With this in mind, the writer has taken it upon himself to investigate the various aspects and the validity of certain assumptions that have been made with respect to the cottaging subclass (N) feature symbol of the Recreation Capability Inventory. A quotation from the Field Manual explaining the subclass N would be appropriate at this time, noting in particular the underlined portion of section 7.N.4.

7.N. LODGING

- 7.N.1. Definition: Land (usually shoreland) suited to family cottage or other recreation lodging use.
- 7.N.2. Associated Activities: Walking, viewing, swimming, fishing, family or deep water boating, etc.

7.N.3. Characteristics:

- 7.N.3.1. This activity implies temporary or permanent occupation of non-urban land selected because of recreation capabilities and developed for private, semi-private or commercial accommodation use. This activity may engender high total annual use.
- 7.N.3.2. Slopes may range from level, with reasonably good drainage, to very steep (30% - 100%), with moderate slopes (7% - 15%) being most suitable as they permit tiered development. Views are important, as is ease of access from shore. A terraced slope may be an asset.
- 7.N.3.3. Capability for vehicle access is important, although on large water bodies water access may be an alternative.
- 7.N.3.4. Shelter from winds, exposure to sun, capability for vegetative cover, outward aspect (viewing), soil materials for foundations and sewage disposal, fresh water availability, are all important factors.
- 7.N.3.5. Beach and water conditions affecting capability for fishing, swimming, bathing, boating are highly important criteria. As opposed to B, where shallow beach gradients are favoured, steeper gradients are most suited to cottage use in that there should be good capability for the beaching of boats and construction of short, stable docks.

7.N.3.6. Nuisance elements such as industrial or traffic noise, air pollution or permanent water pollution or serious insect infestation will limit the capability.

7.N.4. Classification: Lodging capability may be a dominant feature of land units classed from 2 to 5, or a subordinate feature in units classed 1 to 5. A Class 1B shoreland will usually accommodate lodging use but it is assumed an excellent beach will normally attract and sustain more intensive use as a public beach supported with backshore uses also of a public nature.

7.N.4.1. As a dominant feature:

Class 2. Shoreland units with excellent physical attributes in all or most categories described in section 7.N.3., with backshore capability for tiered lodging development and beach capability for moderately intensive use.

Class 3. Shoreland units with capability for a continuous row of lodging development (i.e. an average density of family units of one per 100-foot frontage throughout the unit) and with shorelands with capability for water oriented recreation sufficient to attract that intensity of lodging use.

Class 4. Shoreland units with natural capability for 50% cottage development (i.e. the equivalent of one cottage every 200 feet), fronting water with capability for water oriented activity. Shoreland units with backshore with exceptionally good capability for lodging development in terms of all criteria except that it has severe limitations with regard to access to water or to recreational use of the water may rank Class 4N.

Class 5. Shoreland units with backshore capable of sparse cottage development (i.e. the equivalent of one cottage every 500 feet), fronting on water lacking severe limitations to family water oriented activity. Shoreland units with backshore capability described in Class 4N, but with severe but not prohibitive limitations to water oriented family activity, may rank Class 5N.

7.N.4.2. As a subordinate feature: Lodging may be subordinate to any one or two features such as B, Y, or A, in units ranking from 1 to 5.¹⁸

¹⁸Canada, Department of Forestry and Rural Development, Field Manual: Land Capability Classification for Outdoor Recreation, Ottawa, 1967, p. 65 - 68.

Precise Definition of Study Objectives

This research in cottaging was prompted by the Land Capability Classification for Outdoor Recreation. The initial question was, "Should it be assumed that an excellent beach will attract and sustain more intensive use as a public beach than when it is used for cottaging?". Let us suppose there is a beach which is used by 2,000 persons every weekend during a three month summer. Let us further suggest that because of inclement conditions only nine weekends are suitable for picnicking, sunbathing, or swimming. Thus, there are 18 days of use by those 2,000 people, which equals 36,000 visitor days. How does this intensity of use compare with that sustained by cottaging?

Preliminary examination of the subject raised many other questions, not all of which could be examined. The following statements outline the major objectives of this thesis:

(1) To examine the physical characteristics of eleven delineated cottage areas around Pigeon Lake.

(2) To examine the intensity of cottaging as a shore-land use and to investigate the relationships that exist between intensity of use and the physical character of cottage site.

(3) To examine the types of cottager recreational activity and to investigate the relationships that exist between recreational activity and the physical character of cottage site.

(4) To examine the value of property (land and improvements) and to investigate the relationships that exist between property value and the physical character of cottage site.

(5) To examine the attitudes, intentions, and values of Pigeon Lake cottagers and to investigate some of the relationships that exist between them and the foregoing.

Methodology

Two different methods were used to collect the data for this study. One method focused on a site evaluation to determine the physical characteristics of the several different cottage areas around Pigeon Lake. This was done by the use of the Recreation Capability Inventory outlined earlier in the chapter, and a modified version of Truncer's desirability index.¹⁹ There are two reasons for

¹⁹Truncer, James J., A Brief Look at Artificial Public Beach Development in Michigan, for R.D. 870, Michigan State University, 1961, p. 19.

using Truncer's method in support of the Recreation Capability Inventory method:

(1) To indicate the kinds of criteria that determine the Recreation Capability Inventory classification ratings even though such criteria are not specified in precise detail.

(2) To help verify, justify, and explain the Recreation Capability Inventory method.

Truncer's method of site evaluation is based upon an evaluation chart (Table III) devised to assign credits to various natural beach sites. The ratings do not reflect the use made of property and are purely a physical qualitative assessment not related to the demand factor, exactly like that of the Recreation Capability Inventory. The assigned credits appear to favour those physical characteristics desired by the public. Because of this fact it might at first seem questionable whether such an evaluation system is meaningful in a summer cottage study. However, it is the writer's contention that public user preferences are not unlike those of the private cottagers or any other shoreland user with respect to physical shoreland characteristics.

TABLE III

Fractional Code and Value Credits Assigned to Determine Site

| | Value Credits | Maximum Value Credits |
|---|------------------|-----------------------------|
| A. Beach and Offshore Slope (in degrees) | | |
| 1. 0 - 5 | 3 | 3 |
| 2. 5 - 15 | 3 | |
| 3. 15 - 30 | 2 | |
| 4. Over 30 | 1 | |
| B. Backshore Slope (in degrees) | | |
| 1. 0 - 5 | 4 | 4 |
| 2. 5 - 15 | 4 | |
| 3. 15 - 30 | 2 | |
| 4. Over 30 | 1 | |
| C. Surface Material (Beach) * | | |
| 1. Sand | 4 | 4 |
| 2. Sand and gravel | 3 | |
| 3. Gravel and cobbles | 2 | |
| 4. Rocks and boulders | 1 | |
| 5. Silts and mud | -1 | |
| D. Beach Width (in feet) * | | |
| 1. Indefinite (extremely shallow gradient) | 0 | |
| 2. 0 - 5 | 0 | |
| 3. 5 - 15 | 1 | |
| 4. 15 and over | 2 | 2 |
| E. Offshore Water Condition * | | |
| 1. Clean | 2 | 2 |
| 2. Reeds and/or weeds | 0 | |
| 3. Stagnating and indefinite shoreline | -1 | |
| F. Road * | | |
| 1. Excellent | 2 | 2 |
| 2. Average | 1 | |
| 3. Poor | 0 | |
| | | Total 17 |

Desirability Classes as Determined by Weighted Credit Values

| | |
|---------|--------------|
| Class I | 14 - 17 |
| II | 10 - 12 (13) |
| III | 6 - 8 (9) |

Truncer, James J., A Brief Look at Artificial Public Beach Development in Michigan, for R.D. 870, Michigan State University, 1961, p. 19.

* modified by writer: for explanation see text.

Several changes were imposed on this system, the major ones being as follows:

(1) A new section of criteria labelled "Offshore Water Condition" was added. There are instances known to the writer where all conditions of the desirability index system are present in their most ideal state (i.e. receiving the maximum amount of value credits), yet offshore weeds or extremely shallow gradients causing stagnant water pools severely detract from the site for either public or private use.

(2) The section on "Road and Ferry" access was omitted. No ferry crossings exist in The Pigeon Lake study area and boat access is constant regardless of location.

(3) The section on "Foreshore Condition" was omitted. Foreshore was defined as anything below the high-water mark, and for the purposes of this study this information was already contained in "Surface Material - Beach".

(4) The section on "Accessibility (shoreline from backshore)" was omitted. This can be determined from "Backshore Slope".

(5) The section on "Vegetation" was omitted because of its consistent nature for all cottage areas around Pigeon Lake.

(6) The value credits assigned for road access were lowered because, although not always ideal, they are certainly adequate in all cases.

(7) The number of conditions and the number of value credits assigned to these conditions were changed in some sections.

Obviously, the physical environment largely dictates the quality of the site, but as will be pointed out later, many cottages are utilizing shore types that are not the popular preferences for public beaches. As will also be pointed out later, one of the more obvious physical factors is the importance of water orientation (i.e. the use of water by the cottagers for recreational pursuits or the very fact that a body of water is nearby) in opposition to the use of the land: hence, the reason for including a section on water condition and lessening the number of value credits awarded to the general area of "Backshore" by omitting the sections on "Accessibility" and "Vegetation".

The other method used to collect research data investigated various aspects of cottage use via a mailed questionnaire. The cottage owners' names and addresses were obtained from the tax roll and assessments of the various local government offices having jurisdiction over

Pigeon Lake. The entire Pigeon Lake cottage population of 1,040 was sent a questionnaire during February, 1968. A total of 392 questionnaires was returned, representing a 37.7 per cent response. This was encouraging in light of the following quotation, although a larger return had initially been expected.

The central difficulty in all direct mail techniques is that the percentage of returns is small. A questionnaire of some interest to the recipient may be expected to show only a twenty per cent return even when conditions are favourable....²⁰

A summary of the total number of cottages and average response per question from the individual study areas is outlined in Appendix B. The questionnaire and letter of introduction appear in Appendix A.

CHAPTER I

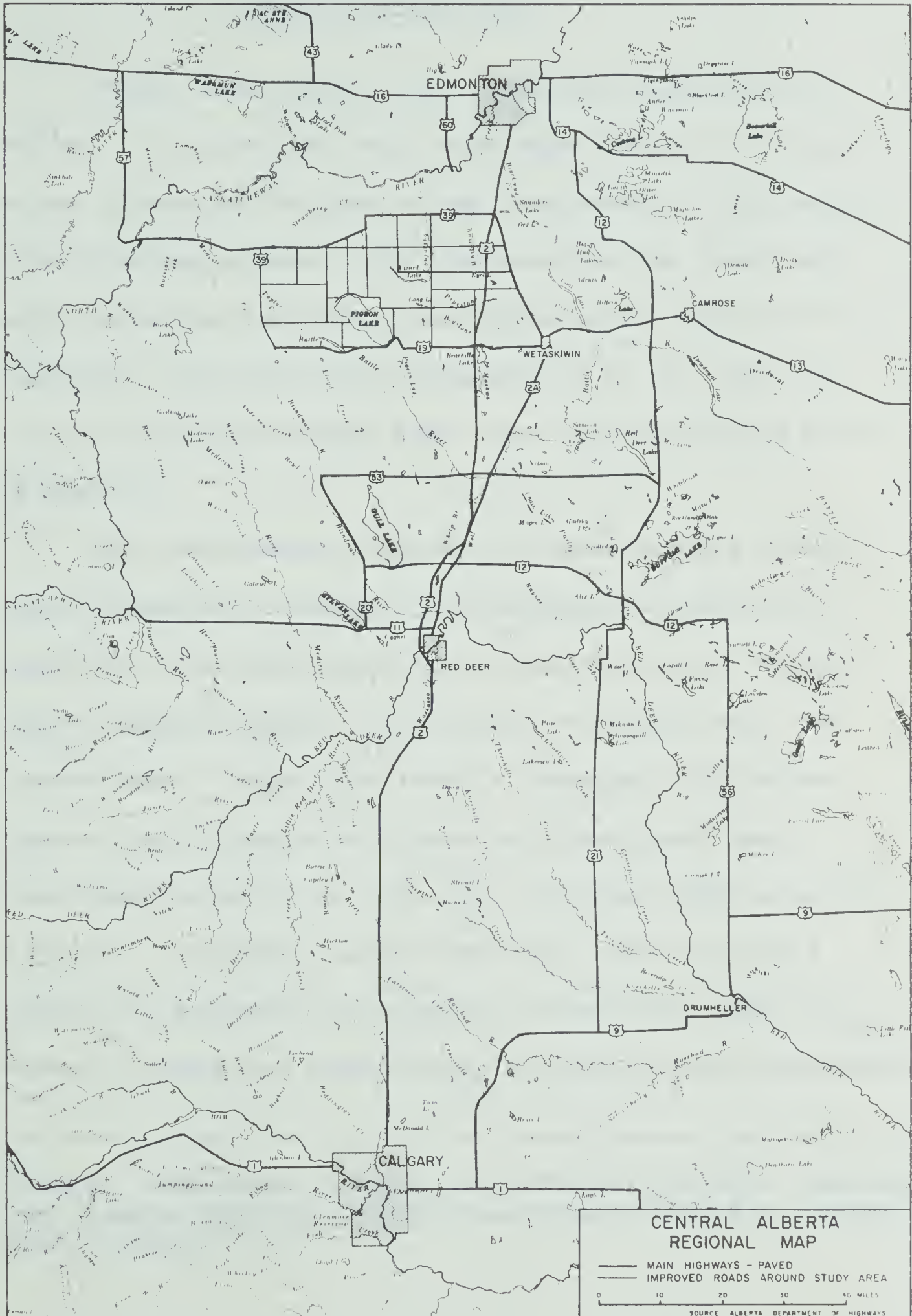
PIGEON LAKE STUDY AREA

Location

Pigeon Lake is approximately 40 miles southwest of Edmonton and 28 miles due west of Wetaskiwin (Figure 1). It is one of a series of lakes located in a north-south line through central Alberta, including Lac Ste. Anne, Wabamun Lake, Gull Lake, Sylvan Lake, and Pine Lake, all of which support privately owned resort cottage developments to varying degrees of intensity. Pigeon Lake is the most southerly of the series substantially affecting the recreational demands of Edmonton city residents. This effect has become even more pronounced since the opening of Highway No. 2 which reduced the road distance between the city and the lake from 63 to 49 miles. The lake is within daily summer commuting distance of Wetaskiwin, Camrose, and Edmonton. Within a one hour time-distance radius there is a total population of 460,000 people of which 410,000 are urban.¹

¹ Canada, Dominion Bureau of Statistics, Census of Canada: Population, Catalogue Nos. 92-606, 92-607, 92-608, 96-616, Vol. 1, Queen's Printer, Ottawa, 1966.

FIGURE 1



Physical Description

Pigeon Lake, with a total shoreline length of 29.5 miles, is a spring fed water body approximately 37 square miles in area and is part of the head waters of the Battle River drainage system. The drainage from its relatively small watershed, extending only three miles back from the lakeshore, flows into the northwest end of the lake and drains out through Pigeon Lake Creek into the Battle River (Figure 1).

This southeasterly current of water and the prevailing northwesterly, westerly, and southerly winds² have resulted in the very substantial sand build-up at Ma-Me-O Beach, Argentia Beach, Silver Beach, Moonlight Bay, and Itaska Beach. These five resorts, together with Zeiner Park on the northwest end, have the finest sand beach development around the lake (note the Class 1SBKY areas on Figure 3). Elsewhere around the lake, beach materials range from somewhat poorer quality sand (Class 2SBKY) at Johnsonia Beach and Golden Days, through various assortments

² Canada, Department of Mines and Technical Surveys, Geographical Branch, Atlas of Canada, Catalogue No. M61-158, Ottawa, 1957, Plate 20.

of till, rocks and large boulders (Class 3SNBY) at Poplar Bay, Grandview, Crystal Springs, Norris Beach, Viola Beach, Mission Beach, and Sundance Beach, to poor quality sand and muck conditions (Class 4SNBY) at Mitchell Beach and Sandholm Beach. Beach widths also vary considerably from non-existent in some places (Kerr Cape and parts of Mission Beach), to upwards of 20 feet in others (Ma-Me-O, Argentia, Zeiner Park).

Offshore gradients range from less than 3 degrees at Ma-Me-O to in excess of 25 degrees at Kerr Cape (a rocky shore and moraine condition). This factor can be off-set to some extent by the construction of piers. The depth of water then becomes an economic factor since the shallower the water the longer the pier must be.

Water level fluctuations on Pigeon Lake range from a maximum elevation of 2780.42 feet to a minimum elevation of 2775.87 feet, with a mean water level of 2777.82 feet.³ Obviously the shallow gradient beach areas are affected the most by fluctuating water levels as a small rise or fall can drastically change the beach width. The maximum recorded

³ Alberta, Department of Agriculture, Water Resources Division, Lake Level Recordings, File 7561, Edmonton, Alberta, September 12, 1968, Pigeon Lake.

water level on Pigeon Lake would completely cover the sand beaches (note Figure 2 illustrating the lake bottom contour configuration).

Water quality is an important physical characteristic affecting the use of a lake for swimming, wading, and bathing. Unlike many of the lakes in central Alberta, Pigeon Lake has excellent water quality and is not plagued with the problems of algae bloom and Schistosoma dermatitis (Swimmer's Itch). However, in some areas access to the water may be hampered or prohibited by the growth of reeds as is the case in the northwestern and southeastern parts of the lake (Class 5SAW and Class 6SAW). Reed growth has been restricted in some places by annual cutting (Class 4SNBY) but it is a very laborious and annoying procedure to contend with year after year. Where reed growth is not restricted, a natural habitat for waterfowl is provided.

Water temperature is another important physical characteristic affecting the use of a lake. Although no data are available for Pigeon Lake, Table IV outlines the temperature structure of Wabamun Lake. Both lakes are very similar in size and depth. Wabamun Lake has an area of 32.6 square miles and a maximum depth of 34 feet, while the figures for Pigeon Lake are 37.03 square miles

FIGURE 2

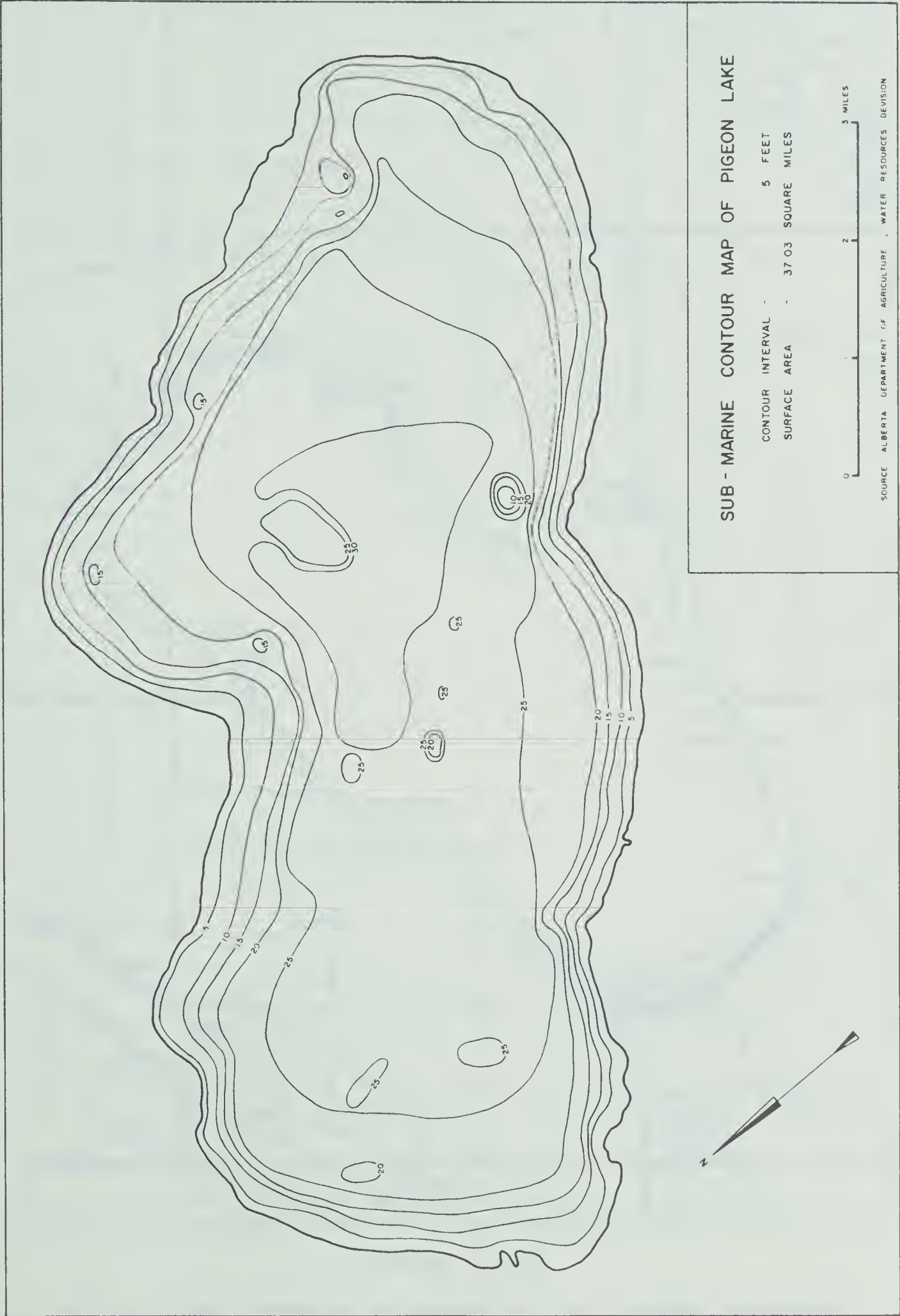


FIGURE 3



PIGEON LAKE

THE C.L.I. LAND CAPABILITY CLASSIFICATION FOR OUTDOOR RECREATION

TABLE IV

RANDOM WATER TEMPERATURES AT DIFFERENT DEPTHS IN WABAMUN LAKE

| Depth (Feet) | July 19 | July 24 | Aug. 5 | Aug. 14 | Aug. 30 | Sept. 7 |
|-----------------|---------|---------|---------|---------|---------|---------|
| 0 | 68.9° F | 70 ° F | 67.5° F | 70.2° F | 63.7° F | 66.7° F |
| 5 | 66.9° F | 68.2° F | 67.4° F | 70.2° F | | 65.3° F |
| 10 | | | | | 61.2° F | |
| 15 | 66.8° F | 67.6° F | 66.8° F | 70.1° F | | 64.6° F |
| 20 | | | | | 60.8° F | 64.4° F |
| 23 | 64.7° F | | 66.7° F | 68.6° F | | |
| 25 | | 67.5° F | | | | 64.4° F |
| 27 | | | | | 60.8° F | |

Source: Data from report of Dennis McDonald, Fish and Wildlife Division, Alberta Department of Lands and Forests. Recorded at several different locations varying from 28 - 32 feet deep. Readings were made at only one location on any one day.

and 30 feet respectively. Wabamun Lake lies only 45 miles northwest of Pigeon Lake.

Pigeon Lake supports a small fishing industry that has harvested an average of 257,000 lbs. annually over the last 15 years. The majority of this poundage is lake whitefish (Coregonus clupeaformis) with smaller amounts of pike or jackfish (Esox lucius) and perch (Perca flavescens) also being caught. Lake trout are absent as they require water temperature stratification. Walleyes are also absent as there are no suitable spawning grounds available. The lake bottom does not produce enough feed to support the actual fish population, but there are adequate supplies of plankton on which the young fish feed. Consequently there is a very high survival rate of young fish that cannot find enough feed to grow to normal size, resulting in a large population of stunted fish.⁴

The Pigeon Lake shoreline is easily accessible in most instances since the surrounding land is gently undulating with a gentle slope to the lake. Agricultural

⁴ Alberta, Department of Lands and Forests, Fish and Wildlife Division, Commercial Fisheries Statistics, 47-1-W5, Edmonton, Alberta, 1968, Pigeon Lake.

settlement around the lake together with the existing cottage situation have resulted in the development of a fairly complete road network. Some places along the lakeshore (e.g. Kerr Cape and Norris Beach) have fairly steep descents to the water's edge but in most cases these banks do not exceed 10 or 15 feet in height and do not prohibit access to the lake.

The natural vegetation of the Pigeon Lake Grey Wooded soil zone is parkland, the main tree cover being aspen poplar (Populus tremuloides) interspersed with white spruce (Picea glauca) and black spruce (Picea mariana) and various species of willow. The density and size of the tree growth, however, is not adequate for commercial forestry cutting operations. Much of the vegetation represents random regrowth in areas where logging activity and earlier clearing have been abandoned. Generally, much of the area is suited for tree clearing and conversion to agricultural uses of the hay pasture and coarse grains type. In fact, a great deal of agricultural settlement and associated clearing has already taken place.⁵

⁵ Battle River Regional Planning Commission, West of the 5th Battle River Regional Plan, Volume 1, Wetaskiwin, Alberta, 1968, p. 11.

Pigeon Lake falls near the western margin of the continental cool summer climatic zone⁶ described as Dfb⁷ in the Köppen classification.⁸ Temperature conditions range from a July mean of 60° F., through mean April and October temperatures of approximately 40° F., to a mean January temperature of 5° F.⁹ The mean annual precipitation is approximately 19 inches, including a snowfall of 60 inches.¹⁰ A pronounced summer maximum is observable with an average of 8.5 inches falling during June, July, and August. Although most of the precipitation results from the interaction between the maritime air masses which cross the mountains from the British Columbia coast and the continental air masses from the northern interior of the country, some summer precipitation results

⁶Canada, Department of Mines and Technical Surveys, Geographical Branch, Atlas of Canada, Catalogue No. M61-158, Ottawa, 1957, Plate 30.

⁷A Dfb climatic zone is one in which the summer has an average temperature of less than 71.6° F. for the warmest month, at least four months with an average temperature above 50° F., and an average temperature below 26.6° F. for the coldest month.

⁸Köppen, W., in R.E. James and H.V.B. Kline, A Geography of Man, Toronto, 1959, pp. 534-543.

⁹Canada, Department of Mines and Technical Surveys, Geographical Branch, Atlas of Canada, Catalogue No. M61-158, Ottawa, 1957, Plate 21.

¹⁰Loc. cit.

from the convectional uplift on long, hot summer days.¹¹

Recreation Development

Recreation development around Pigeon Lake can be divided into four types: institutional camp development, commercial development, public area development, and private summer cottage development.

Institutional Camps

There are nine institutional camps scattered around Pigeon Lake, all of them being associated with either church or youth organizations. The head quarters of the organizations are located in Edmonton, but membership is drawn from a much wider area. Most of the camps are located in areas not suited to intensive development and therefore do not compete with the summer villages for land. The camps alter the site very little and consequently maximize their enjoyment of the natural environmental setting. They are basically operative only during the months of July and August and are very intensively used during this period (e.g., the Lutheran Bible Camp averages

¹¹Critchfield, H.J., General Climatology, Englewood Cliffs, N.J., 1960, p. 223.

ninety people per week).¹²

Commercial Development

There are no hotels or motels around Pigeon Lake and as a consequence commercial recreation development is minimal. At present it takes the form of rental cabins at Ma-me-o Beach and Mulhurst; two campsite developments on either end of Ma-me-o Beach provided and managed by the Pigeon Lake Reserve Indians; a golf course at Mulhurst; and riding stables, tennis courts, a small children's playground, trampolines, and a dance hall (heavily patronized on Saturday nights) at Ma-me-o Beach.

Public Area Development

In theory the general public is able to use those areas around Pigeon Lake designated as reserve areas and access areas (to the lake), but in practice these are seldom used. They are areas of varying size specifically for the use of the general public and equipped with such facilities as toilets, picnic tables, shelters, and cooking

stoves. The public beach at Mulhurst extends for a half mile in length but the useable area is severely narrowed by a road located twelve feet behind the beach. Similar areas, shorter in length, are found at Crystal Springs, Silver Beach, and Mission Beach. The principal reasons for their lack of use are:

(1) the crowding roads afford little privacy and are dangerous for children playing,

(2) these areas are often plagued with insects,

(3) those people who enjoy an uncrowded beach cannot rely on getting it, and when they do they feel out of place amongst the surrounding private cottagers literally at home in the area and enjoying their material possessions.

Ma-me-o, offering the attributes of a very fine beach, a provincial park, commercial development, and weekend crowds, is an exception. Two hundred cars may line the roads at Ma-me-o on a hot Sunday in August. On the other hand, there may be only fifteen carloads of people at the other public areas. Ma-me-o Beach Provincial Park, which is nothing more than a roadside campsite equipped with cooking and parking facilities, had 43,053

recorded visitors in 1966.¹³ This figure however is inaccurate due to the method used (car traffic counter) in recording visitor numbers.

Zeiner Park, situated on the northwest shores of Pigeon Lake, is a municipally controlled public area offering facilities for camping and picnicking and also providing a very fine beach. Though not as intensively used as Ma-me-o Beach Provincial Park, its attendance is increasing every year.¹⁴

With the increased public demand for space, good facilities, and good natural resources, the new Pigeon Lake Provincial Park should receive a great deal of use. It is situated on the western shores of the lake north of the Poplar Bay cottage development. Located on a Class 2SBKY beach and having a much larger developable area than either Zeiner Park or Ma-me-o Beach Provincial Park, Pigeon Lake Provincial Park should be able to accommodate a much wider range of users from the ever increasing urban population in central Alberta.

13

Alberta, Department of Lands and Forests, Parks Division, Parks Attendance, 47-1-W5, Edmonton, Alberta, 1968, Ma-me-o Beach Provincial Park.

14

County of Leduc Administration Office, Receipt and Ticket Ledger, S.W.24-Tw.47-R.2-W5, Leduc, Alberta, Zeiner Park.

Private Summer Cottage Development

Summer cottage development around Pigeon Lake is comprised of 1040 cottages grouped into eighteen resorts (Table V), eight of which are classed as summer villages (Table V). The names of the resorts vary from those of owners' (i.e. Norris Beach) to those reflecting the pastoral and placid attitude (i.e. Crystal Springs, Moonlight Bay) that prevails around the lake.

On the basis of the field and questionnaire data, locational proximity of the resorts to one another, and similarities in shoreland physical conditions, the eighteen resorts were grouped into ten study areas. However, size of the study area was a fourth factor involved in the division of the Poplar Bay - Viola Beach area along the southwest side of Pigeon Lake, increasing the total number of study areas to eleven (Table V).¹⁵

The number of cottages in each study area varies considerably, ranging from a low of 20 at Kerr Cape to a high of 184 at Ma-me-o Beach. These details are summarized in Appendix B.

15

Some differences in questionnaire data were involved in this division as well as the size of the study area.

TABLE V

The 18 Resorts, 8 Summer Villages, and 11 Study Areas
of Pigeon Lake

| Resorts | Summer Villages | Study Area |
|-----------------|-----------------|-----------------|
| Fisher Home | | Fisher Home |
| Mitchell Beach | | Mitchell Beach |
| Mission Beach | | |
| Sundance Beach | | Sundance Beach |
| Kerr Cape | | Kerr Cape |
| Moonlight Bay | | |
| Itaska Beach | Itaska Beach | Itaska Beach |
| Johnsonia Beach | | |
| Golden Days | Golden Days | Golden Days |
| Sandholm Beach | | Sandholm Beach |
| Argentia Beach | Argentia Beach | |
| Silver Beach | Silver Beach | Silver Beach |
| Ma-me-o Beach | Ma-me-o Beach | Ma-me-o Beach |
| Viola Beach | | |
| Crystal Springs | Crystal Springs | Crystal Springs |
| Norris Beach | | |
| Grandview | Grandview | |
| Poplar Bay | Poplar Bay | Poplar Bay |

Unlike urban development, cottaging around Pigeon Lake has a linear spatial organization rather than a concentric one, and is dispersed rather than nucleated. As will be shown later in the discussion, cottaging is almost entirely dependent upon the urban source for its population; as suburbia cannot exist without a downtown area so cottaging cannot exist without a nearby city.

The actual cottage itself is usually built of wood, although other materials such as stone, brick, and corrugated sheeting may occasionally be used. Interior partitioning follows a variety of patterns ranging from a minimum number of rooms to that almost indistinguishable from a modern bungalow. Similarly the amount of land on which the cottage is situated may vary. At Ma-me-o Beach, where many of the lots are already subdivided, there is a minimum restriction of 66 foot frontage and 120 foot depth for the size of each lot, enforced by the summer village. The average size of cottage lots is approximately 75 foot frontage by 150 foot depth.

Many of the cottage sites are graded and cleared of scrub but few are extensively altered and in most instances the trees are left standing so that the cottages are situated in an essentially sylvan setting. This retains the country

atmosphere and also provides privacy for the cottagers.

Classifications Used In Site Evaluation

As was mentioned in the methodology section of the Introduction, two recreation land classification systems were used to describe and evaluate the physical characteristics of the eleven cottage areas around Pigeon Lake: the Recreation Capability Inventory and Truncer's Desireability Index.

The Recreation Capability Inventory - Pigeon Lake

The Recreation Capability Inventory map (Figure 3) of the Pigeon Lake shoreland (and surrounding area) illustrates the recreational potential of land and water resources. Capability Classes 1 to 6 are represented on the map along with a wide range of recreational features or sub-classes.

The natural capability of the Pigeon Lake shoreland to support outdoor recreation is high. Slightly more than three-quarters (76.3 per cent) of the shoreland is capable of sustaining intensive recreational use (Classes 1, 2, and 3) (Table VI). This percentage can be increased to 84.6 per cent of the shoreland if the Class 4 areas are added. Although not rated as capable of supporting

intensive recreational use, demand for cottage areas on Pigeon Lake has resulted in the development of the Class 4 shorelands.

TABLE VI

Total Length of Shoreline, Percent of Total Shoreline, and Number of Units in Each Capability Class Around Pigeon Lake.

| Classes | No. of Units | Length of Shoreline (mi.) | Percent of Total Shoreline |
|---------|--------------|------------------------------|-------------------------------|
| 1 | 4 | 6.45 | 21.9 |
| 2 | 4 | 3.25 | 11.0 |
| 3 | 7 | 12.80 | 43.4 |
| 4 | 3 | 2.45 | 8.3 |
| 5 | 3 | 2.80 | 9.5 |
| 6 | 2 | 1.75 | 5.9 |
| 7 | 0 | 0 | 0.0 |
| Total | 23 | 29.50 | 100.0 |

The Class 1 areas constitute 21.9 per cent of the total shoreland and include the three study areas of Ma-me-o Beach (Plate 1), Silver Beach (Plates 2 and 3), and Itaska Beach (Plates 4 and 5) as well as Zeiner Park on the northwest side of the lake. Factors such as good quality sand beach material, gentle offshore and backshore gradients,



Plate 1. Ma - me - o Beach



Plate 2. Argentia Beach



Plate 3. Silver Beach



Plate 4. Moonlight Bay



Plate 5. Itaska Beach



Plate 6. Johnsonia Beach

shelter from prevailing winds (except in the case of Ma-me-o Beach, and even there wind is not a problem), high quality water, and suitable development areas combine to give those shorelands their high rating. Not only do these areas present the private owner with absolutely ideal conditions for cottaging, they also can provide excellent focal points for intensive public beach development.

There are four Class 2 areas on Pigeon Lake comprising 11.0 per cent of the total shoreland. Only one of these, Golden Days (Plates 6 and 7), is a study area. Two others are located within the Pigeon Lake Indian Reserve on the south and southeast ends of the lake and the remaining one forms part of the Pigeon Lake Provincial Park shoreland on the west side of the lake. These areas are only slightly inferior to the Class 1 areas. The limiting factors are the narrow beach and the occurrence of gravel and cobbles in the sand. The offshore gradient is not as shallow as the Class 1 areas, facilitating better boating conditions.

The Class 3 areas, representing 43.4 per cent of the shoreland, include the four study areas of Poplar Bay



Plate 7. Golden Days



Plate 8. Poplar Bay

(Plates 8 and 9), Crystal Springs (Plates 10, 11, and 12), Sundance Beach (Plates 13 and 14), and Fisher Home (Plate 15). Rocky-till shorelands, moderate offshore gradients suitable for boat launching, swimming and other water activities, and a backshore very well suited for intensive cottage development give these areas moderately high potential for recreation. These areas, however, are not ideally suited for intensive public beach development.

Class 4 capability areas generally have the moderately severe limitations of very shallow offshore gradient which induce stagnating water and muck conditions (Mitchell Beach, Plate 17 and Sandholm Beach, Plate 18) or have very steep backshore slopes making building very difficult and expensive (Kerr Cape, Plate 16). The former situation makes boating very difficult and swimming very unpleasant. The situation does improve during years of high water level. The latter situation is ideal for boating and swimming because of the steep offshore slopes. Wading and bathing activities are impossible, however.

The areas in Classes 5 and 6, comprising 15.4 per cent of the shoreland, will support much lower use intensities. None of these areas possesses cottage development because of the weed and reed growth offshore and the



Plate 9. Grandview



Plate 10. Norris Beach



Plate 11. Crystal Springs



Plate 12, Viola Beach



Plate 13. Mission Beach



Plate 14. Sundance Beach



Plate 15. Fisher Home



Plate 16. Kerr Cape



Plate 17. Mitchell Beach



Plate 18. Sandholm Beach



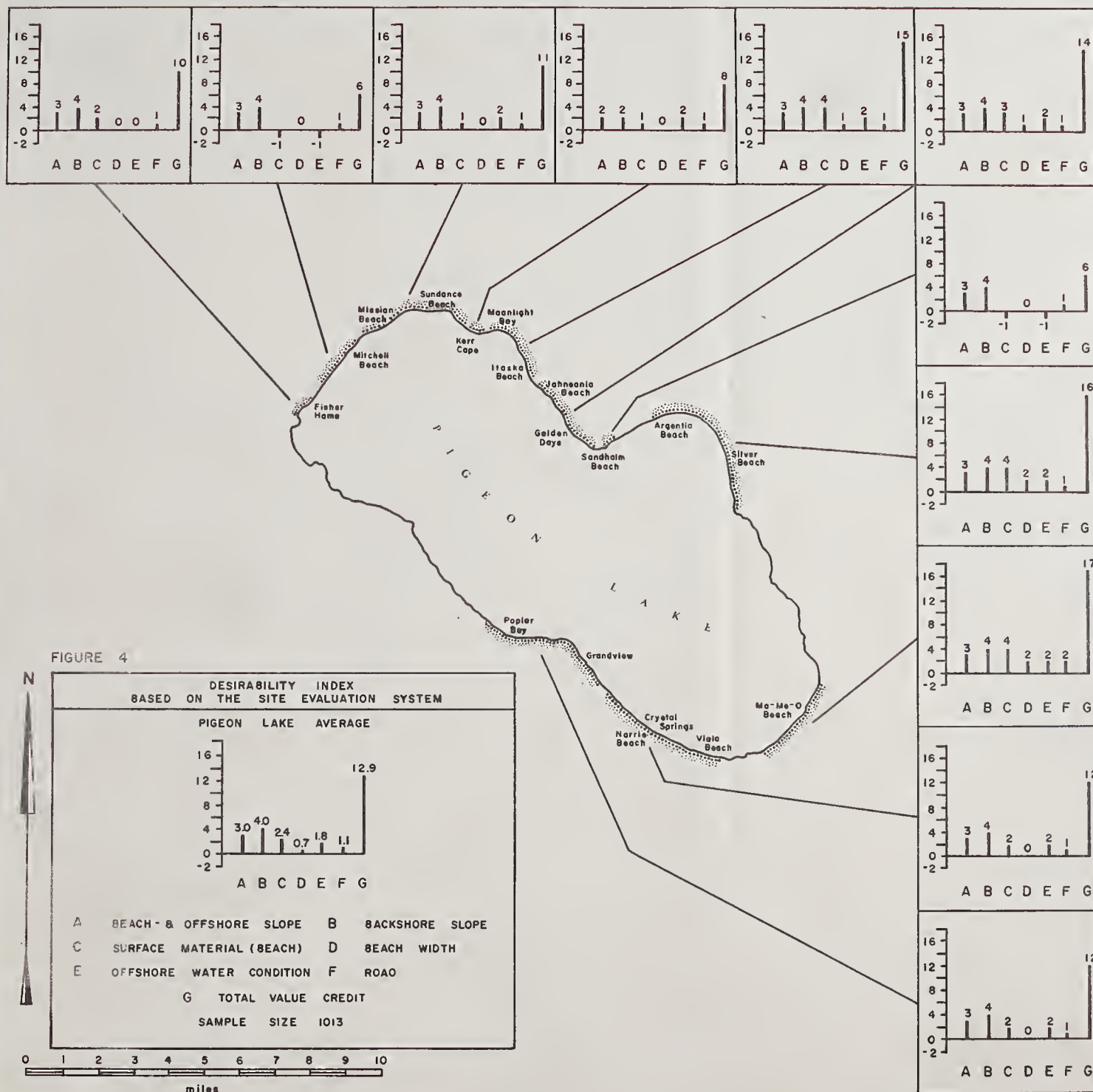
Plate 19. Sandholm Beach

extremely mucky shoreland and offshore conditions. The actual features that might attract potential uses to each shoreland unit are shown by the feature symbols following the class number.

Truncer's Desirability Index

From Figure 4 it can be seen how the six site-determining variables outlined in Table III apply to the eleven Pigeon Lake cottage development areas. Four of the cottage areas fall into Desirability Class I, four into Desirability Class II, and three into Desirability Class III. The average number of value credits assigned to Pigeon Lake cottage sites in total is 12.9. Only the four cottage areas in Desirability Class I exceed this average. The reason for the high overall average (12.9) is the large numbers of cottages in the four Desirability Class I cottage areas in comparison to the relatively few cottages in other cottage areas.

Only one cottage area was assigned less than the maximum number of 7 value credits for the "Beach and Off-shore Slope" and "Backshore Slope" physical conditions combined. In both situations Kerr Cape exceeds the 15 degree slope and indeed comes very close to a 30 degree



slope. Consequently, only 2 value credits were assigned to each of the above physical conditions.

Conversely, only one cottage area was assigned the maximum number of 2 value credits for "Road" condition to the cottage site. Ma-me-o has pavement to the beach area. All the other cottage areas were assigned only 1 value credit for average road conditions. The two cottage areas of Poplar Bay and Crystal Springs, particularly the latter, almost justified receiving the maximum number of value credits because of their close proximity to Highway No. 19, running east-west past the southern end of Pigeon Lake (Figure 1). On the negative side, the rough nature of the dirt and gravel roads from the pavement to the cottage site detracted from the accessibility of the areas.

The remaining three physical criteria (surface material, beach width, and offshore water condition) portray considerable variation ranging from maximum to minimum numbers of value credits.

Ma-me-o Beach, Silver Beach, Itaska Beach, and Golden Days, having 17, 16, 15, and 14 assigned value credits respectively, are the four cottage areas of Desirability Class I. All but one has an Outdoor Recreation Capability Classification of 1SBKY, with Golden Days being Class

2SBKY.

Ma-me-o Beach (Plate 1) with its excellent sand beach, shallow offshore and backshore gradients (less than 5 degrees), clean water, and paved Highway No. 19, is the only cottage area around Pigeon Lake receiving the maximum number of value credits.

Silver Beach has identical physical conditions (Plates 2 and 3) but it is necessary to drive 8 to 20 miles on gravel roads to reach the cottages. Consequently, this area has been assigned 16 value credits.

Itaska Beach was assigned 15 value credits since it has an excellent sand beach with clean water and shallow offshore and backshore gradients (Plates 4 and 5). However, the beach is less than fifteen feet wide and the cottage site can only be approached via 19 to 25 miles of gravel road.

Because of the sand and gravel beach material, the Golden Days cottage area (Plates 6 and 7) was docked one more value credit than Itaska Beach. Unlike the foregoing three cottage areas, the offshore gradient exceeds 5 degrees but this situation still warrants the maximum of 3 value credits.

Poplar Bay, Crystal Springs, Sundance Beach, and Fisher Home are the four cottage areas constituting the Desirability Class II for Pigeon Lake. All four areas have a Class 3SNBY or 3SNYB Outdoor Recreation Land Capability classification.

Poplar Bay and Crystal Springs (Plates 8, 9, 10, 11, and 12) have homogeneous physical situations with 5 to 15 degree offshore and backshore slopes, gravel and cobble surface material, less than a five foot beach width, clean water, and only a few miles of dirt and/or gravel road mileage to the cottage site. This physical situation has been assigned 12 value credits.

Sundance Beach (Plates 13 and 14) has been assigned one less value credit because of the surface material. Although not always rock and boulder, sufficient sections of the shoreland have this condition to warrant only a single value credit, making a total of 11 value credits for this cottage area.

Fisher Home (Plate 15) has been assigned 10 value credits on the basis of an offshore and backshore slope of less than 5 degrees, a beach less than five feet wide, gravel and cobble surface material, some offshore reeds in

the water and considerable gravel road mileage to the cottage site.

The remaining three cottage areas of Kerr Cape, Mitchell Beach, and Sandholm Beach make up the Desirability Class III section of Pigeon Lake. The latter two have an Outdoor Recreation Capability Classification of 4SNYB while Kerr Cape has been classified as 4SNY.

Kerr Cape (Plate 16), as mentioned earlier, has an offshore and backshore slope approaching 30 degrees. Surface material consists of rocks and boulders. There is virtually no useable beach area due to the steep bank slopes. The water condition is clean and road access is average with several miles of gravel road travel necessary. On this basis, 8 value credits have been assigned to Kerr Cape.

Mitchell Beach (Plate 17) and Sandholm Beach (Plate 18), on the other hand, have very different physical conditions. Extremely shallow offshore gradients have resulted in stagnant offshore water and muck conditions which promote weed growth. No value credits have been assigned for beach width due to its indefinite nature and poor condition. Six value credits have been assigned to both these areas.

If it has not already become apparent from the foregoing discussion, it should be noted that there is a direct correlation between the quality of the shoreland site (based on the Outdoor Recreation Land Capability Classification) and the desirability of the site (based on the Site Evaluation System). Classes 1 and 2 Land Capability sites can be aligned with Class I Land Desirability sites, with Land Capability Class 2 having the lower Land Desirability rating (Note Johnsonia Beach - Golden Days in comparison to Ma-me-o Beach, Argentia Beach - Silver Beach, and Moonlight Bay - Itaska Beach in Figure 3). Classes 3 and 4 Land Capability sites can be aligned with Classes II and III Land Desirability sites respectively.

CHAPTER II

RELATIONSHIPS BETWEEN USE AND VALUE VARIABLES AND PHYSICAL SITE AT PIGEON LAKE

The majority of information discussed in the text and presented on the maps in this chapter is based on the cottage questionnaire sent to the Pigeon Lake cottagers during July, 1967. Supplementary data were obtained from municipal and provincial taxation assessment records. The questionnaire and a summary of the cottager response to the map questions appear in Appendix A and Appendix B respectively.

Intensity of Cottage Use

One of the primary questions in recreation planning is the amount of use a physical unit area can engender and sustain. In campground development a very important issue is the optimum campground capacity which can be engendered and sustained without degeneration of the physical landscape. The consequence of such degeneration, if it takes place, is a deterioration in the quality of the recreational experience derived by the users. Except for the presence of the cottages themselves, little obvious deterioration of the landscape values results from cottage development.

However, it can be argued that this preserved environment is only a benefit to a few, and that increasing private shoreland use is an erosion of public land which will be deeply regretted in future years. There is an ever increasing demand for park areas near the larger metropolitan areas in Canada and although much of the land utilized for summer cottaging is not suitable for mass public use, a significant amount around Pigeon Lake is very suitable.

On the other hand, cottaging is itself a very intensive use of land. The statistics in Figure 5 illustrating the Pigeon Lake Average will verify this statement:

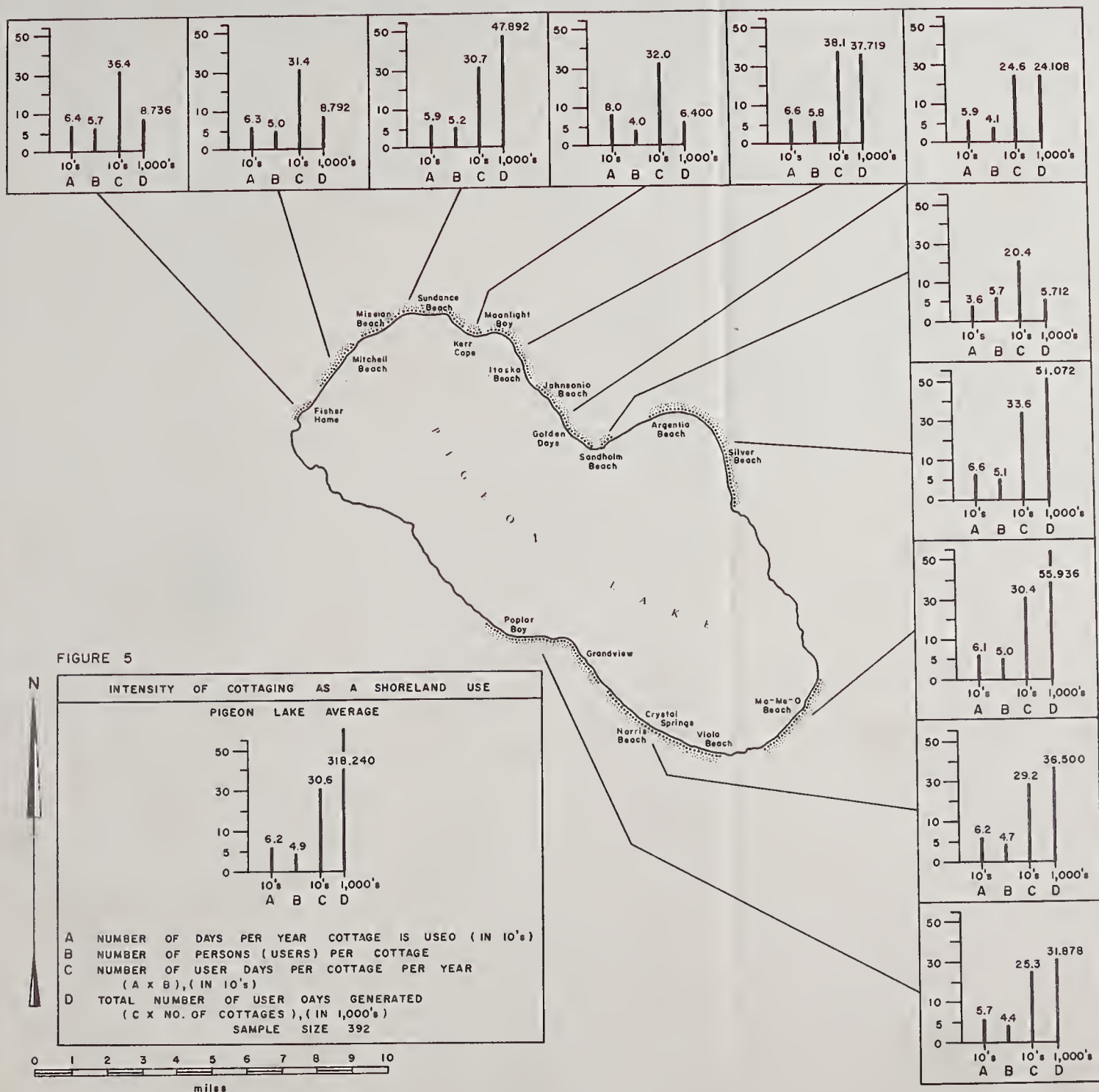
The average number of days per year the cottage is used = 62

The average number of persons (users) per cottage = 4.9

The average number of user days generated per
cottage year (62 x 4.9) = 306

Therefore, the average number of user days per linear
foot of lakeshore per annum (306 ÷ 75) (average cottage
lot frontage around Pigeon Lake is 75 feet) = 4.1

It is very interesting to compare these statistics with the attendance figures recorded at Zeiner Park on the northwest end of Pigeon Lake. Zeiner Park is located on a



Class 1 Beach (Gilwood Beach) between Fisher Home and Mitchell Beach. The beach is slightly more than half a mile in length (3,000 feet). In 1967, this park attracted 14,160 visitors¹ (user days). On the basis of 75 foot lots, Gilwood Beach could support 40 front row cottages. If each cottage again averaged 306 user days, Gilwood Beach would be generating 12,240 user days per year. Naturally this figure is much lower than many of the other cottage areas portrayed in Figure 5 because of the comparative lengths of shoreland. The other Recreation Land Capability Class 1 areas of Ma-me-o Beach, Itaska Beach, and Silver Beach are 1.6 miles, 1.4 miles, and 3.1 miles in length respectively. However, the intensity of use per linear measurement is comparable. Under the foregoing conditions, Gilwood Beach would be sustaining 4.1 user days per linear foot per year. Second and third row cottage development would increase this figure considerably. Ma-me-o Beach, which has incomplete second and third row development, is sustaining 6.6 user days per linear foot per year. Itaska Beach, which has some second row development, is sustaining 5.1 user days per linear foot per year.

¹County of Leduc Administration Office, Receipt and Ticket Ledger, S.W. 24-Tw. 47-R.2-W5, Leduc, Alberta, 1967, Zeiner Park.

Silver Beach, which does not have complete front row development, is sustaining 3.1 user days per linear foot per year. On this basis then, it is now apparent that cottaging is indeed an intensive recreational use of land.

It is true that more people may benefit from the public beach but the intensity of use is quite similar. The implication, then, derived from this sort of analysis is simply that public and private use of such water front areas may be equal in terms of intensity of use. Furthermore, if cottaging is a more intensive use of a shoreland area than public use, should not all shoreland that will support cottage development be, or allowed to be, developed as such; and if so, should not all shoreland areas supporting this intensity of use (i.e. all shoreland ranging from good quality sand to rocky till - Recreation Land Capability Classes 1 to 3 - bordering on good quality water) rate equally high on the Outdoor Recreation Capability Classification system if the basis of classification rating is intensity of use? It was precisely this question that attracted the writer to this study, and in the beginning, prior to research, the answer was thought to be "yes".

However, after analyzing the data and contemplating the high intensity of use resulting from cottaging, it did seem

strange that in practice the more common resource (rocky-till shoreland) was becoming as important (with respect to intensity of use) as the less common and highly demanded resource (i.e. high quality sand beaches). The problem arose from the fact that two different land uses were being compared only in relation to one another (i.e. public beach use and cottage use) and never considered as complementary land uses. A Recreation Land Capability Class 3 rocky-till shoreland will not support public beach activity to any great degree. It will only support cottaging (and related activities). A good quality beach, however, will support both types of development if properly planned and proper planning is also presumed in the Outdoor Recreation Capability Classification system. Ma-me-o Beach provides a good example of this principle, because it presently accommodates both kinds of development. However, the public is presently being crowded into the 4 acre Ma-me-o Beach Provincial Park with access alleys to the beach between the front row cottages. If properly planned, this area could accommodate both kinds of development in a much more pleasurable setting for all concerned. Cottaging could have been located farther back and towards the ends of the sand beach area. This would still permit easy access to the

beach area for the cottager. The urban development at Ma-me-o could have taken place in the same manner. This procedure would have completely opened up the beach and immediate backshore areas to the public.

The argument is not that more areas should be devoted to cottages but that the most rational and logical use should be made of the land resources available. In many of the areas around Pigeon Lake the land is not suitable for mass public use and thus the natural resource present is better suited to summer cottage development. On the other hand, the Recreation Land Capability Class 1 and Class 2 sand beach areas presently under intensive cottage development are very suitable for public use and might very well attract and sustain more intensive use from the combined forces of the public and the private cottager.

It should be further noted from Figure 5 that the "Number of User Days Per Cottage Per Year" is very consistent around the entire lake. Eight of the eleven cottage areas obtain from 292 days use per year to 381 days use per year. Poplar Bay and Golden Days are lower with 253 and 246 days per cottage per year, respectively. Sandholm Beach is the lowest, averaging 204 days of use per cottage per year. No explanation is apparent for these lower figures.

There is almost no relationship between the amount of cottage use and the physical character of the cottage site. Although the Recreation Land Capability Class 1 area of Itaska Beach does obtain the most intensive average cottage use of 381 days per year, the Class 3 area of Fisher Home is a very close second with 364 days per year. Furthermore, although one of the three Class 4 areas (Sandholm Beach) does obtain the least intensive average cottage use of 204 days per year, Kerr Cape and Mitchell Beach (the other Class 4 areas) rank fourth and fifth with 320 and 314 days per year respectively, several days per year more than Ma-me-o Beach. The Class 2 area of Golden Days obtains the second lowest intensity of use with 246 days per year.

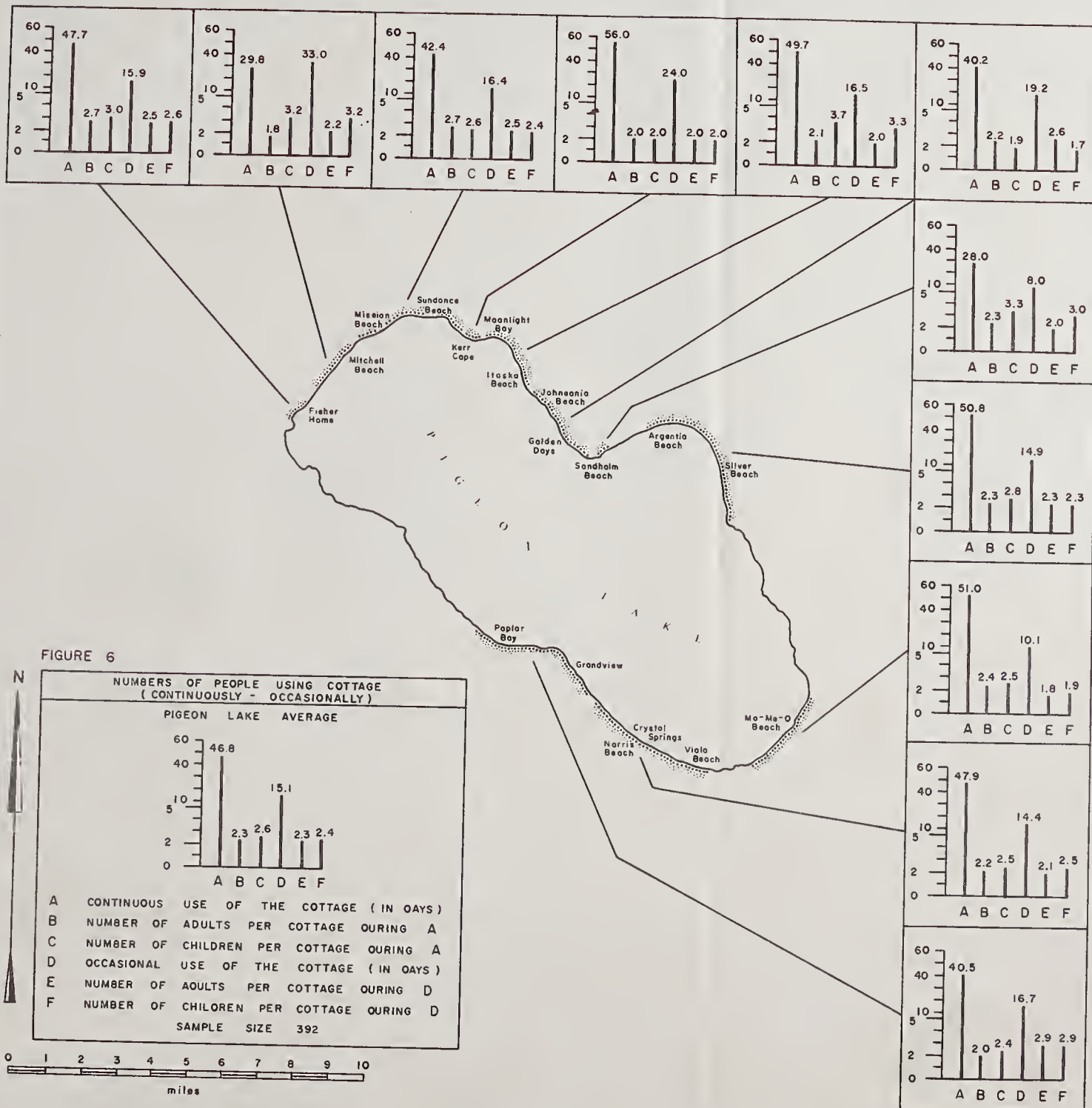
Likewise, the average number of persons per cottage and the number of days per year the cottage is used varies little around Pigeon Lake. However, there is a definite relationship between access (distance from home to cottage) and visitation rate. Naturally short travelling time is conducive to more frequent visitation and longer seasonal use. This was particularly noticeable in examining the responses of Calgarians and those from outside Alberta.

In probing more deeply into the intensity-of- use

data supplied by the cottagers, it was found that cottagers spend the majority of their day outside their cottage. An average of 6.3 hours are spent on the lot around the cottage, 5.6 hours in or on the water or on the beach, 1.4 hours on the shoreland but off the cottage lot, and only 10.7 hours inside the cottage, most of which would be spent eating and sleeping. Thus, while the urban oriented cottager may desire certain conveniences in the cottage, almost all his disposable time is spent outside the cottage.

From Figure 6 it can be deduced that cottaging is very much a family oriented involvement. The average number of people per cottage is 2.3 adults and 2.6 children during the period of continuous use and 2.3 adults and 2.4 children during the period of occasional (or weekend) cottage use. Such similarity between the adult and child numbers would strongly indicate that whenever the cottage is used it usually involves the entire family.

Some families share their cottage with friends and spend alternate weeks or weekends there, but this necessitates very good friendship for such an arrangement to work. Sometimes the use of the cottage is offered to friends for part of the summer, in other instances the cottage has become a family institution with all spending an allocated

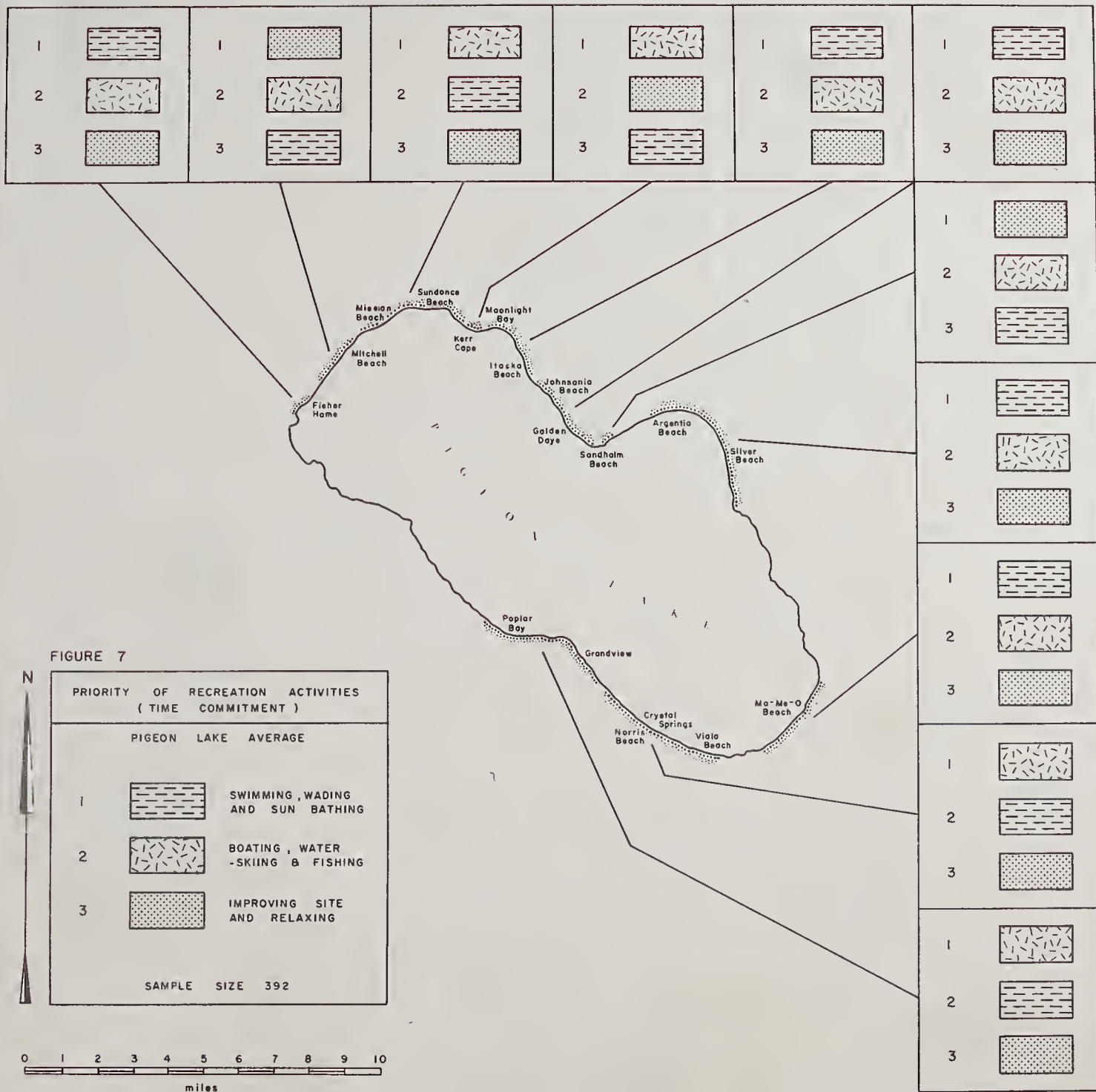


amount of time at the cottage. The outcome of this is that just over half of the cottages are used for seven or more continuous weeks of the year and that just under half are used for sixteen weekends of the year. Thus, summer cottages are used intensively for a short period of the year. More specifically, the cottages are used on weekends from May to September or even October, depending on the weather, and almost continuously during July and August. During this period the husband may commute daily or weekly from the lake to his place of work.

The Type of Recreational Activity

Beach activities dominate over lake activities and cottage-site activities around Pigeon Lake (Figure 7). Combined, these activities clearly reflect the desire of the cottager to be close to water as was noted previously.

It is interesting to note how the physical factors influence the recreational emphasis from area to area. All the excellent beach Class 1 and 2 Recreation Land Capability areas (i.e. Ma-me-o Beach, Silver Beach, Itaska Beach, and Golden Days) indicate that the majority of their recreation activity time is spent on the beach. All these cottage areas also indicate lake activities as the second priority on their time and cottage site recreation activities third.



The rocky-till Class 3 shoreland areas of Sundance Beach, Crystal Springs, and Poplar Bay indicate identical recreation activity priorities on their time in the order of lake activities, beach activities, and cottage site recreation activities. It is apparent then that the development of boat orientated recreation is related to areas of poor or no beach development. In addition, these rocky-till, relatively steep offshore gradient conditions more readily accommodate boat launching facilities (shorter piers) which is of significant importance in the assessment of land capability.

The shallow gradient, stagnant water Class 4 areas of Mitchell Beach and Sandholm Beach also portray identical priorities beginning with cottage site recreation activities, through lake activities, to beach activities.

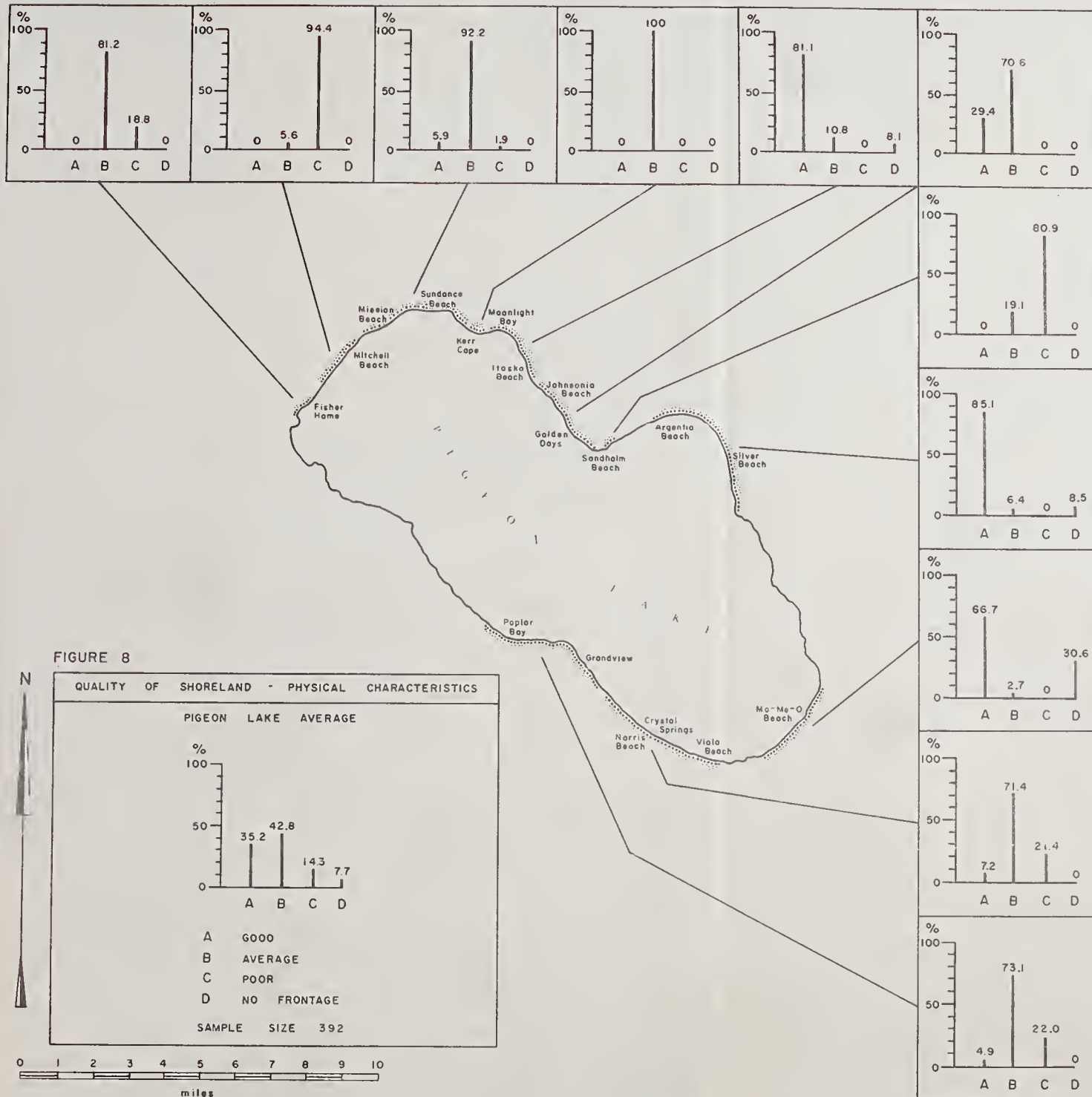
Fisher Home and Kerr Cape are the only anomalies to the above relationship. Fisher Home has the same priority time commitment as the Class 1 and 2 capability cottage areas although its own physical shoreland condition is rated as Class 3. It does have, however, more sand on the beach and is not plagued with rocks offshore, as is the case prevailing in most areas of the other Class 3 cottage areas. The Class 3 rating at Fisher Home is due to the combination of some onshore rock and a shallow offshore gradient, not so

shallow, however, as to cause the stagnant and mucky water conditions that exist at Mitchell Beach and Sandholm Beach.

Kerr Cape is unlike any of the other cottage areas, with a recreation activity time commitment priority of lake activities, cottage site activities, and beach activities. It has the same primary time commitment as the Class 3 cottage areas. This might be related to the similarities in physical shoreland conditions. The Class 4 rating at Kerr Cape is due to the steep offshore and backshore slopes. These conditions are a very definite limitation to beach activities and might very well be the reason for the order of cottage site activities followed by beach activities.

Cottagers' Opinion of Shoreland

The cottagers' opinion of the shoreland is interesting (Figure 8). The reply given varied according to different criteria and personal experience. Thus, while some rated the beach at Ma-me-o to be the best in Alberta and, therefore, excellent, a visitor from the west coast rated it much lower. Similarly, those with small children considered shallow, offshore gradients as good to excellent for swimming, while those without children considered such



conditions as only fair. Nevertheless, 35.2 per cent described the physical characteristics of their cottage site shoreland as good, 42.8 per cent as average, and 14.3 per cent as poor. No lakeshore frontage was claimed by 7.7 per cent, with most of them naturally being located at Ma-me-o Beach. The only other two areas experiencing this situation at present are Itaska Beach and Silver Beach.

Ma-me-o Beach, Silver Beach, Itaska Beach, and to a less extent Golden Days, (i.e. the Class 1 and 2 Land Capability cottage areas) were the areas that gained the greatest numbers of good reports on shoreland physical characteristics. Similarly, the Class 3 shoreland capability areas of Fisher Home, Sundance Beach, Kerr Cape, Crystal Springs, Poplar Bay, and the Class 2 area of Golden Days gained the greatest numbers of average reports. As might be expected, the Class 4 areas of Mitchell Beach and Sandholm Beach can be closely associated with the majority of poor shoreland physical characteristic reports.

Property Values and the Relationships to Physical Character of Cottage Site

The land and improvement values presented in this chapter are market land values as determined by the use

of government taxation assessment. Taxation assessment is approximately 60% of the market land value.

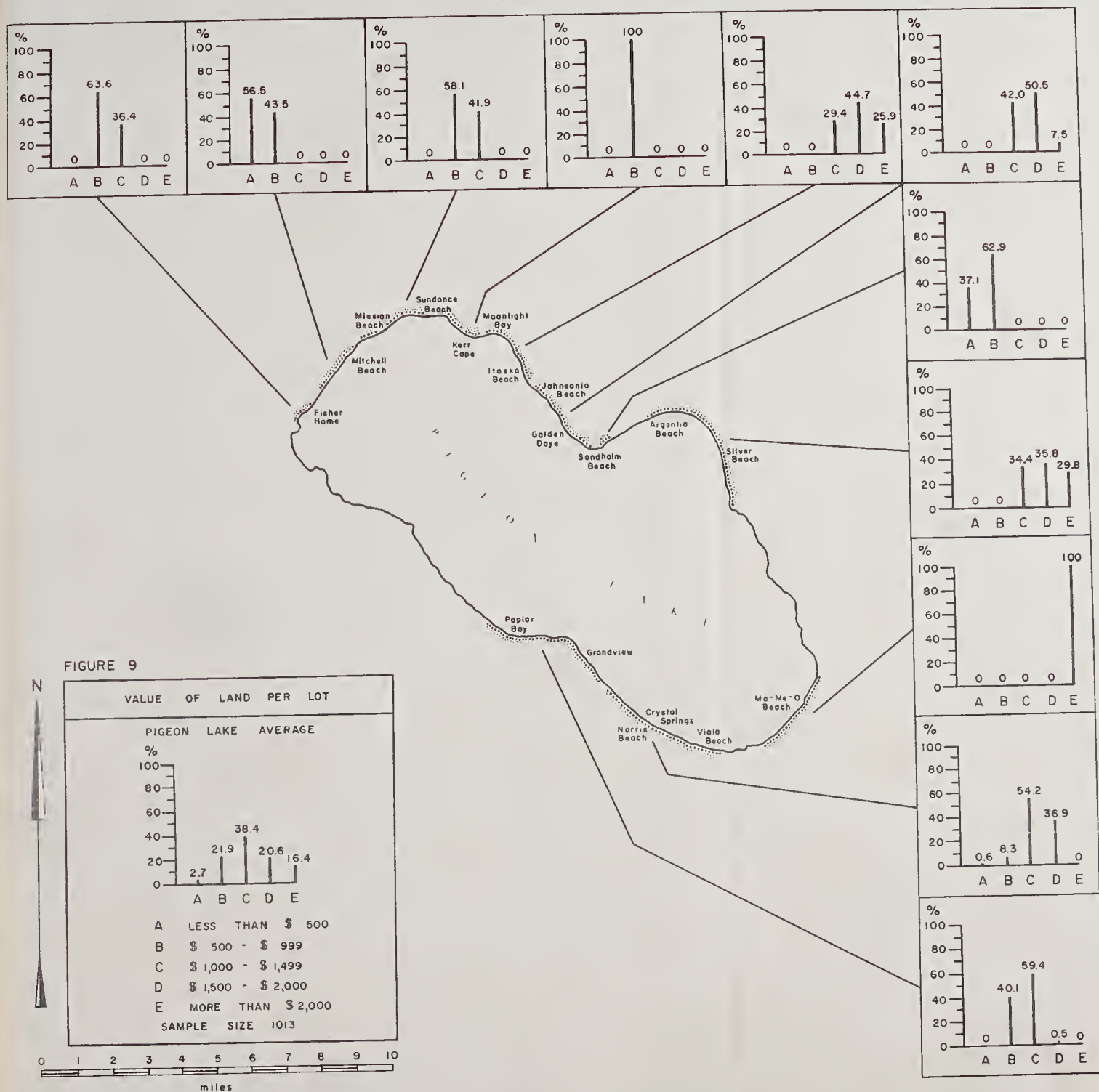
Figure 9 illustrates the variation in cottage lot values around Pigeon Lake. Over 75 per cent have a land value of \$1,000 or more per lot.

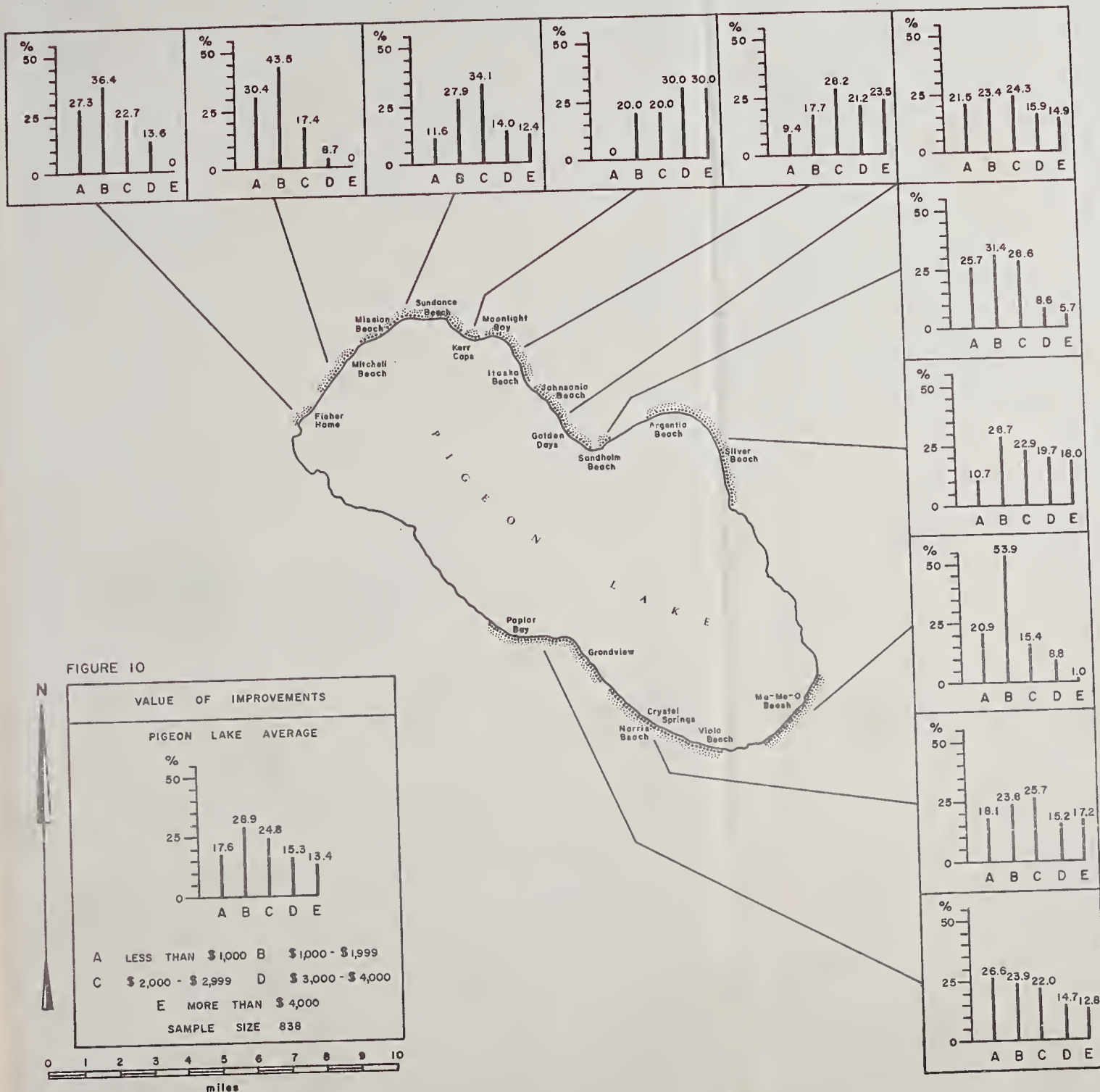
As might be expected, there is a direct relationship between the quality of the site and the value of the land. Only the Land Capability Classes 1 and 2 have any lot values exceeding \$2,000. Indeed, all the frontage lots at Ma-me-o are valued at more than \$2,000. Silver Beach and Itaska Beach follow with 29.8 per cent and 25.9 per cent, respectively. The Class 2 Land Capability site of Golden Days has only 7.5 per cent of its lots exceeding \$2,000. None of the Class 1 and 2 Land Capability cottage areas have frontage lot values of less than \$1,000.

Conversely, the three Land Capability Class 4 cottage areas have no lots valued at \$1,000 or more.

With the exception of Crystal Springs the Land Capability Class 3 cottage areas have virtually no cottage lot values exceeding \$1,499. Crystal Springs has nearly 37 per cent of its cottage lots valued at \$1,500 or more.

Figure 10 illustrates the variation in improvement values on the cottage lots. Unlike the previous map





(Figure 9) where there was limited variation within a cottage area because of the relatively homogeneous nature of the physical characteristics, the graphs of Figure 10 show a much greater statistical variation within each cottage area.

There is a lack of correlation between the quality of site and the value of improvements. This is most dramatically portrayed in Ma-me-o Beach. It was previously mentioned that all of the frontage lots at Ma-me-o were valued at more than \$2,000, yet only 1.0 per cent of the same front row cottages have improvements exceeding the \$4,000 value. This is in comparison to 13.4 per cent of all Pigeon Lake cottages having improvements exceeding \$4,000.

Another dramatic example is Sandholm Beach. It was previously mentioned that no cottage lot in this area was valued at \$1,000 or more, yet nearly 6 per cent of Sandholm Beach cottages have improvements exceeding \$4,000 in value. Furthermore, almost 43 per cent have \$2,000 or more in improvements.

In many cases, the value of improvements is a measure of income. These relationships will be discussed in the next section.

Figure 11 may best summarize the relationship between the Recreation Land Capability Inventory Class ratings and the values of land and improvements of the cottage sites within the eleven cottage areas. There is a land value of \$1,500 or more on 76.4 per cent of the cottage lots in the Land Capability Class 1 areas, 58.0 per cent of the cottage lots in the Land Capability Class 2 areas, 12.3 per cent of the cottage lots in the Land Capability Class 3 areas, and none of the cottage lots in the Land Capability Class 4 areas. This clearly illustrates the direct relationship between quality of physical site and value of land.

The relatively consistent distribution of improvement values indicates the lack of correlation between quality of physical site and value of improvements. However, in the Land Capability Class 4 percentage graph line on improvement values, the fact that only 7.4 per cent of the cottages have more than \$4,000 in improvements while, on the other hand, 23.5 per cent of the cottages have more than \$1,000 in improvements, does tend to indicate a slight correlation between environment and degree of improvement.

Figure 12 summarizes the same information regarding the values of land and improvements in relation to the

FIGURE 11

RECREATION LAND CAPABILITY - PROPERTY VALUE RELATIONSHIPS

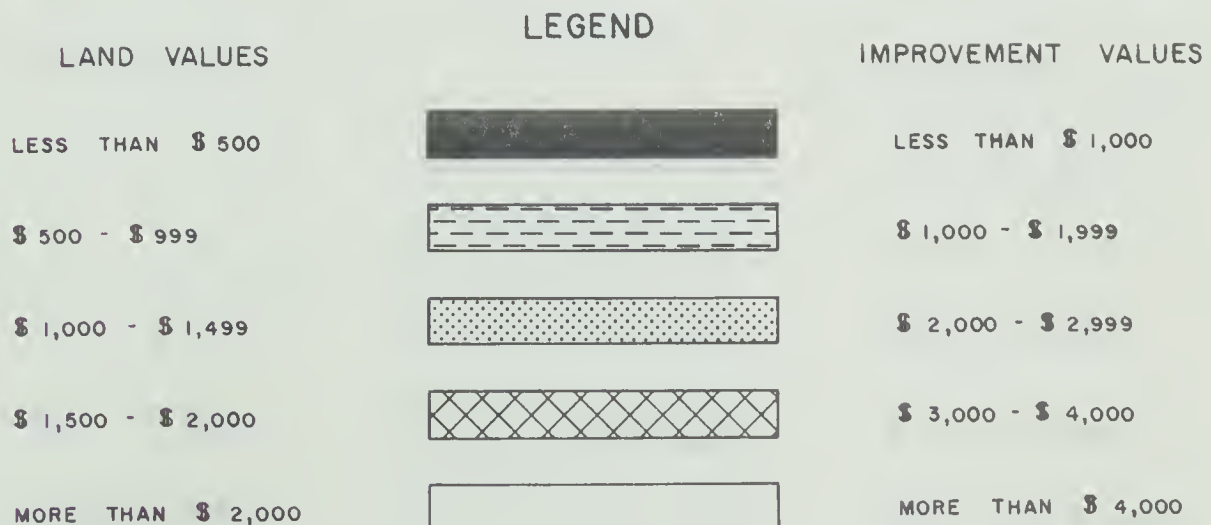
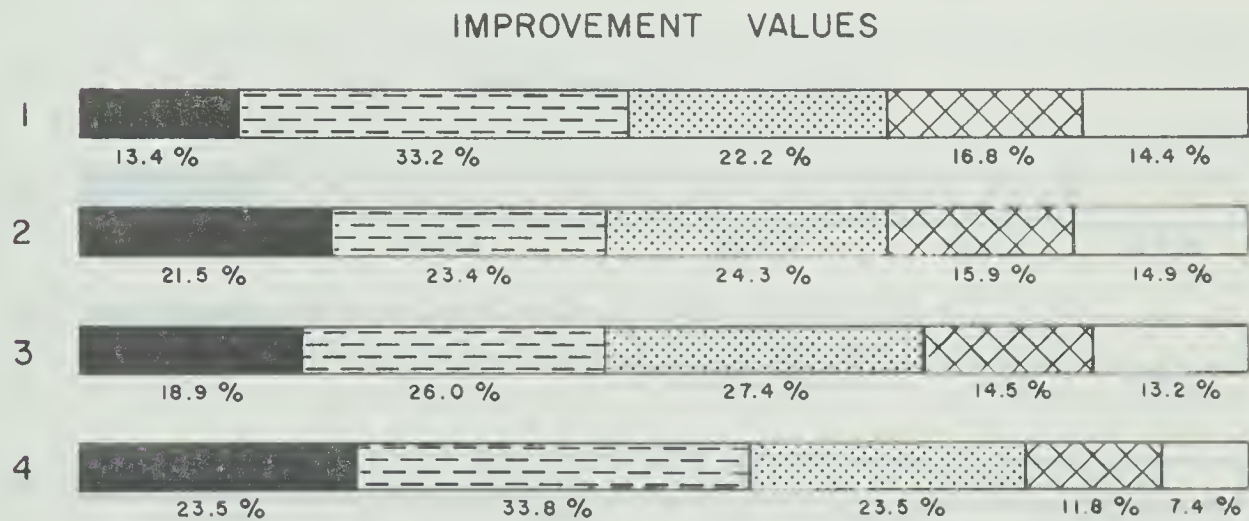
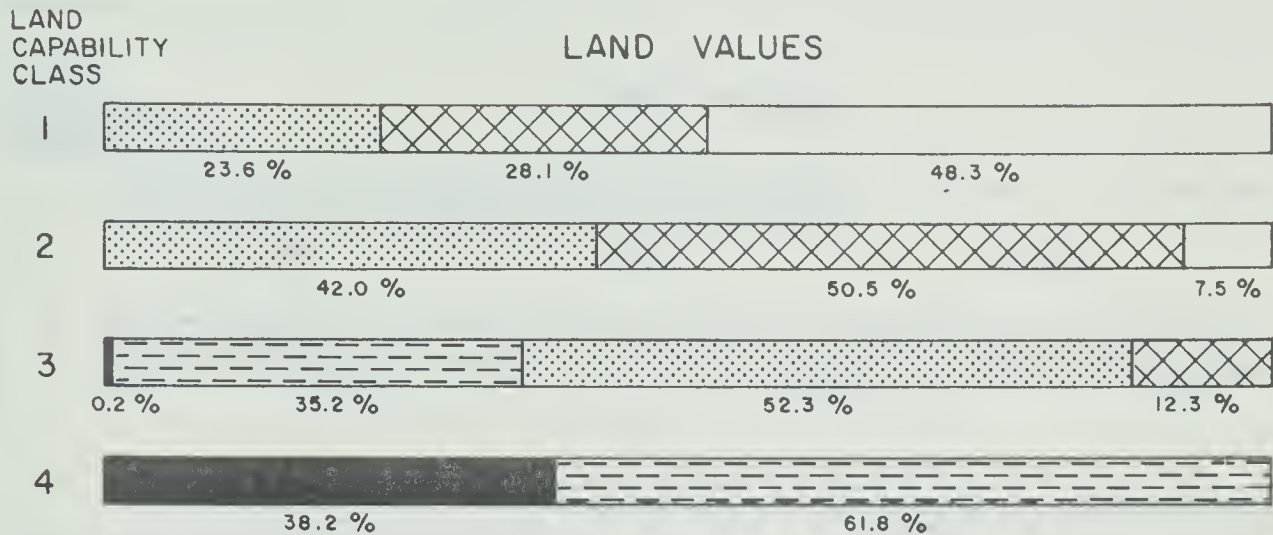
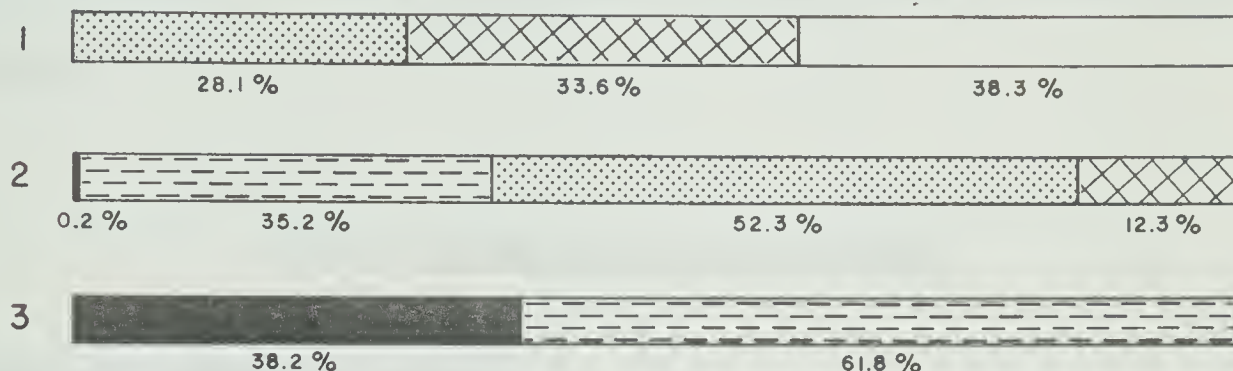


FIGURE 12

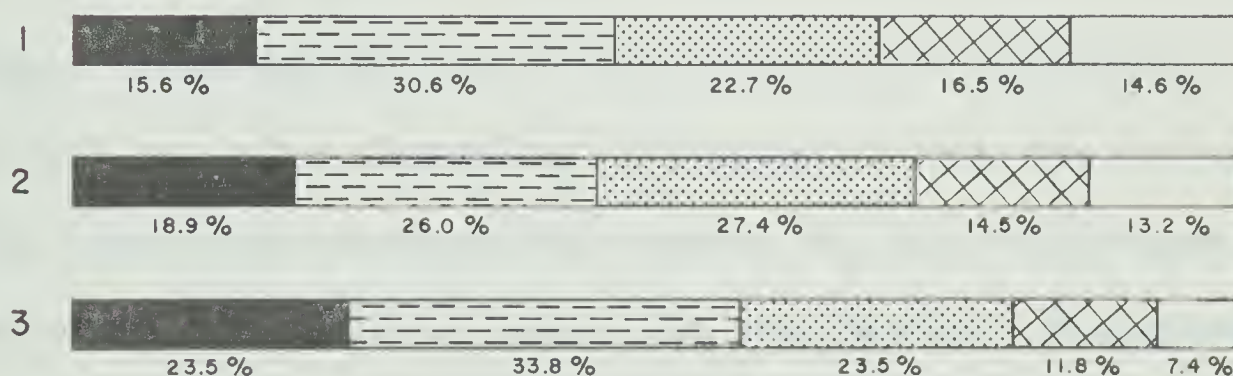
LAND DESIRABILITY - PROPERTY VALUE RELATIONSHIPS

LAND
DESIRABILITY
CLASS

LAND VALUES



IMPROVEMENT VALUES



LEGEND

LAND VALUES

LESS THAN \$ 500

\$ 500 - \$ 999

\$ 1,000 - \$ 1,499

\$ 1,500 - \$ 2,000

MORE THAN \$ 2,000

IMPROVEMENT VALUES

LESS THAN \$ 1,000

\$ 1,000 - \$ 1,999

\$ 2,000 - \$ 2,999

\$ 3,000 - \$ 4,000

MORE THAN \$ 4,000

Land Desirability Classes based on Truncer's evaluation system (outlined in the introductory chapter). It can be readily seen how the Land Capability Classes 3 and 4 compare to the Land Desirability Classes 2 and 3 respectively. Although not as readily visible, the Land Capability Classes 1 and 2 do compare to the Land Desirability Class 1.

The Cottager and His Motives

Cost of Owning a Cottage

As can be noted from Table VII, it costs an average of \$1,637 per annum to own and operate a cottage on Pigeon Lake. This annual cost varies from \$1,072 per annum to \$2,065 per annum depending on whether or not the cottage has lake shore frontage and whether or not the cottage is owned by one family or more than one family. Therefore, it is not surprising to find that the age distribution of cottage owners is biased in favour of the middle-age group and that incomes are well above that of the national and provincial averages (Table VIII).

TABLE VII
ANNUAL COST OF OWNING A COTTAGE ON PIGEON LAKE

| Variable Costs | | Fixed Costs | Total Costs |
|----------------|-----------|---------------------|-------------------------------|
| Mileage | \$ 312.00 | Taxes \$ 111.00 | Total Annual Costs \$1637.00 |
| Maintenance | 121.00 | Depreciation 402.00 | Total People Days 306.00 |
| Equipment | 85.00 | Interest 508.00 | Variable cost/person/day 2.01 |
| Other | 98.00 | | Fixed cost/person/day 3.34 |
| Total | \$ 616.00 | Total \$1021.00 | Total cost/person/day \$ 5.35 |

Source: Responses to questionnaire (Appendix A).

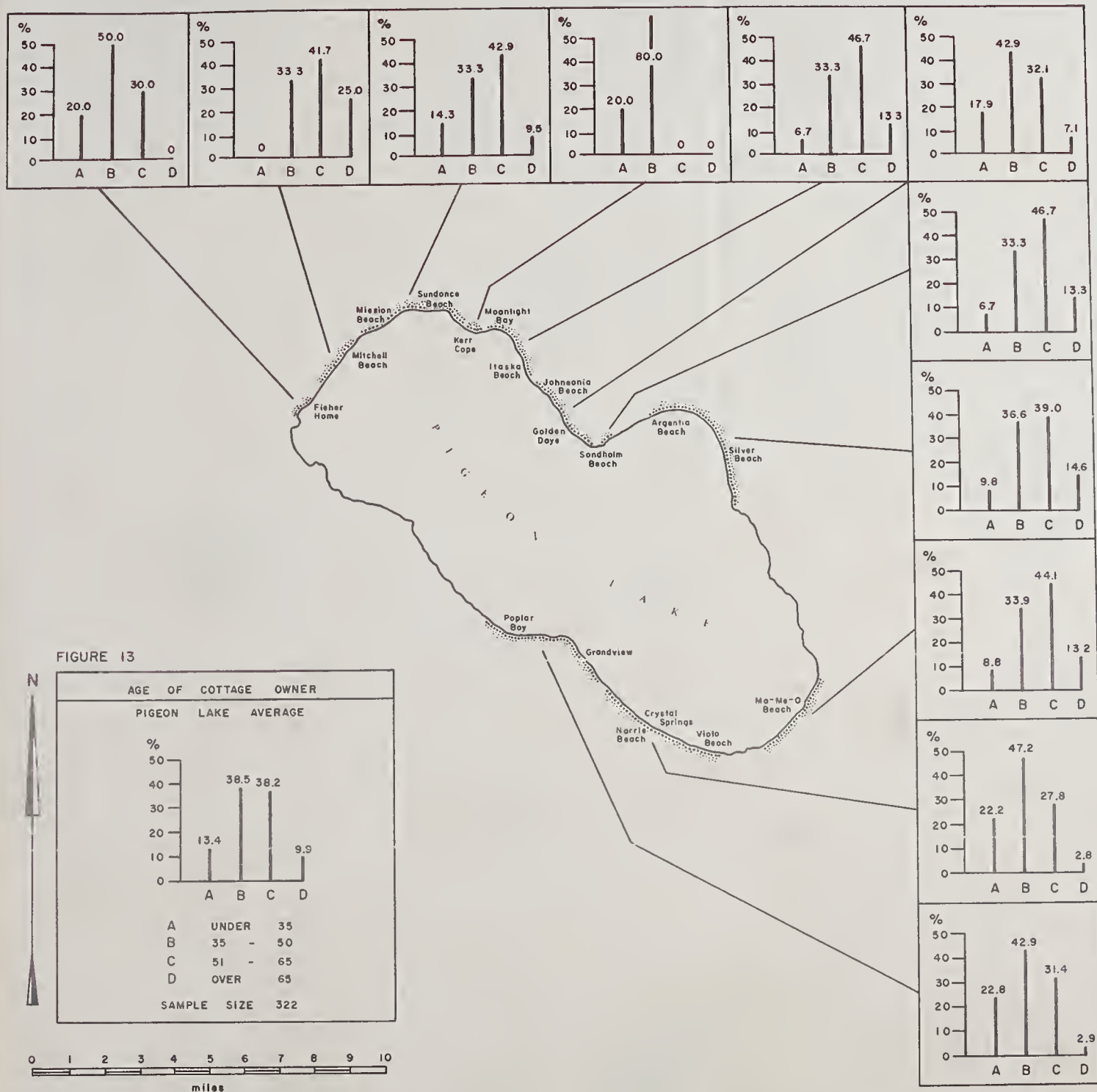
TABLE VIII
AVERAGE INCOMES PER ANNUM

| Area | Sex | Total | Single | Married |
|----------|--------|---------|---------|---------|
| Canada | Male | \$3,679 | \$2,234 | \$4,165 |
| | Female | 1,995 | 2,050 | 1,933 |
| Alberta | Male | \$3,733 | \$2,203 | \$4,282 |
| | Female | 2,001 | 2,076 | 1,936 |
| Edmonton | Male | \$4,059 | \$2,417 | \$4,550 |
| | Female | 2,055 | 2,159 | 1,965 |

Canada, Dominion Bureau of Statistics, Census of Canada: Labour Force, Catalogue No. 94-536, Vol. III - Part 3, Queen's Printer, Ottawa, 1961.

Age of Cottage Owner

Over 76 per cent of all Pigeon Lake cottage owners are between the ages of 35 and 65, with only 13.4 per cent below age 35 and 9.9 per cent above age 65 (Figure 13). The Poplar Bay, Crystal Springs, Golden Days, Kerr Cape, and Fisher Home areas are unusual with their relatively large numbers of cottage owners below age 35. One significant correlation is the fact that these areas are the most recent to have been developed. Poplar Bay and Crystal Springs are the most recent and have the highest percentage of younger people, while Golden Days is the least recent of the above

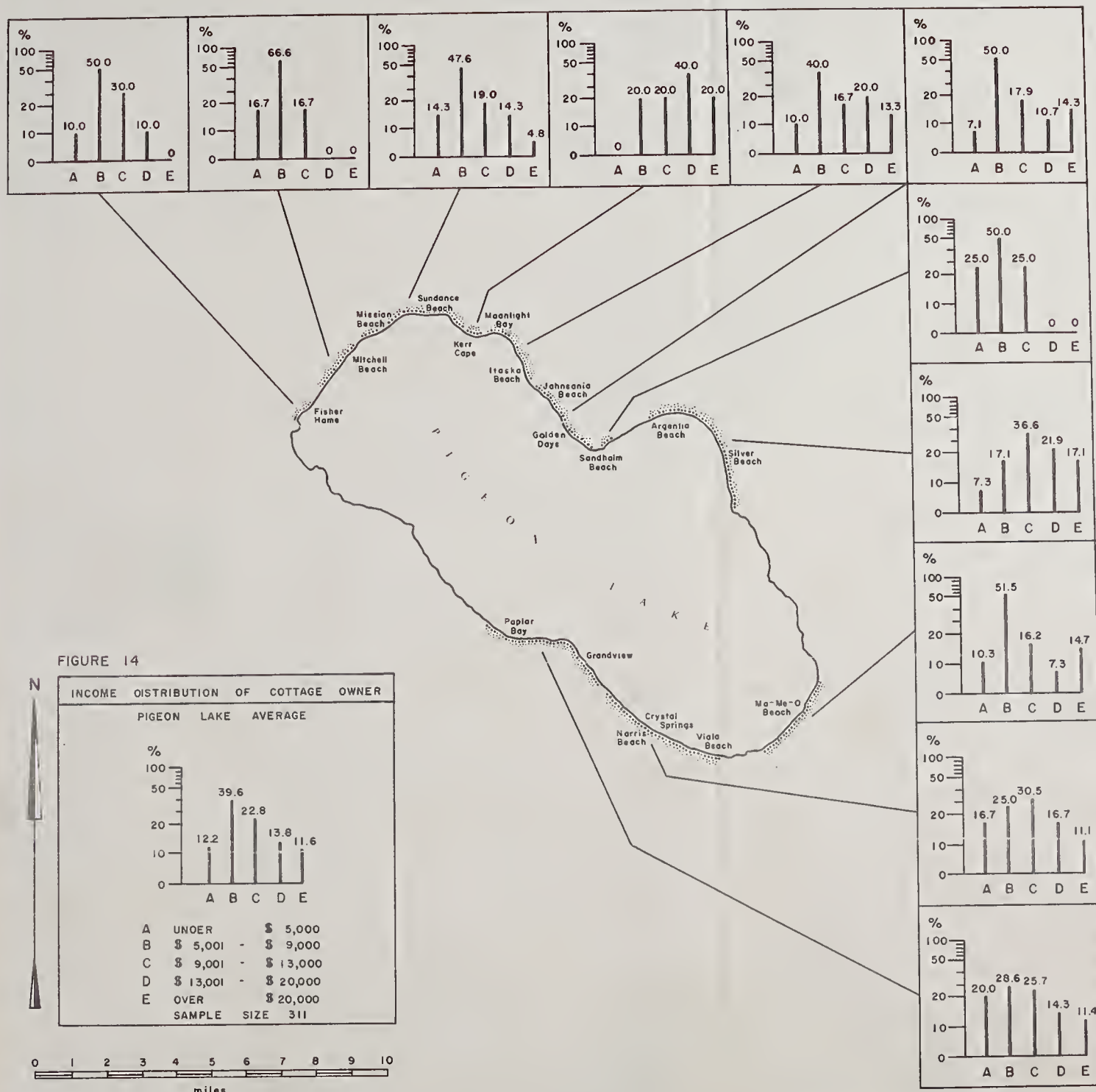


and has the lowest percentage of young cottage owners. This correlation can be followed to some extent through the remaining areas although the relationship becomes less distinct because of the increased probability of ownership change in the longer established areas.

Income Distribution of Cottage Owner

From Figure 14 it is apparent that cottagers have an annual income which is considerably higher than the national and provincial averages (Table VIII). Eighty-seven per cent of the Pigeon Lake cottagers earn more than \$5,000 per annum and 25.2 per cent earn more than \$13,000 per year, a situation that would seem to indicate cottaging as being an activity of the "well-off" and wealthy.

As with a city there are considerable differences in the locations chosen by each of the various income groups. The different residential areas in a city reflect to some degree the quality of locality, the history of land development, and the socio-economic levels of the residents. It might, therefore, be postulated that such is true of cottaging. If this is true, then there should be evident correlation between the high income group and the best recreational



shoreland. On the other hand, however, it may simply be that different income groups have different ideas of what constitutes a good cottage site. If this is the case, who can make a judgement on what is a good or bad site if all yield a maximum satisfaction to the individual?

If the former proposition is assumed, then two areas, Itaska Beach and Silver Beach stand out as prime cottage land. Respectively, 33.3 per cent and 39.0 per cent of these cottagers earn more than \$13,000 per year. Both cottage areas are located on Class 1 Recreation Capability shoreland having very fine sand beaches.

Two anomalies to this argument are Ma-me-o Beach and Kerr Cape. Ma-me-o Beach has very similar physical characteristics to Itaska Beach and Silver Beach but only 22 per cent of the cottage population has an annual income of over \$13,000. This can be attributed, however, to the public nature of the beach and village area as described in Chapter 1. This tends to drive the higher income groups to areas offering more seclusion.

Kerr Cape, however, has very different physical characteristics and yet 60 per cent of its own cottage population earn more than \$13,000 per annum. The shoreland is very rocky and the backshore is very steep and high.

This makes building construction expensive to the point of warding off the lower income group, especially when the site does not offer a shoreland condition favourable to beach activity. On the other hand, the site offers an excellent view, being situated twenty to thirty feet above the water, a feature, along with seclusion, that some people in higher income groups are willing to pay for.

At the other end of the scale, therefore, it is not surprising (in light of the above argument) to find that Mitchell Beach and Sandholm Beach are the best examples of the lower income groups. The offshore gradient is very low, causing stagnant, mucky water conditions and, therefore, not very attractive to either the beach or the boat enthusiast. In both cases the age of cottage owner, especially in the case of Mitchell Beach, is considerably higher than the lake average. This leads one to believe that many of the cottagers in and around retirement age are just looking for a quiet place to spend their summer, away from the hustle and bustle of city life. If this is the case, the incomes of most of the retired cottagers were probably higher at one time prior to retirement. In any event, there were no responses from either area indicating annual incomes in excess of \$13,000.

The remaining areas show quite similar income compositions, with the majority of cottagers showing earnings of between \$5,000 and \$13,000 per annum. The only other major anomaly is the southwestern side of the lake from Poplar Bay to Viola Beach. All income groups are very well distributed, resulting in the medium income groups being much less evident than in other areas. As mentioned earlier, this area also has a relatively young population. This may be an indication that young people wish to own similar material possessions to those of higher income and older age groups as soon as income permits. Being young, they are able to lessen their costs considerably by doing much of the building themselves.

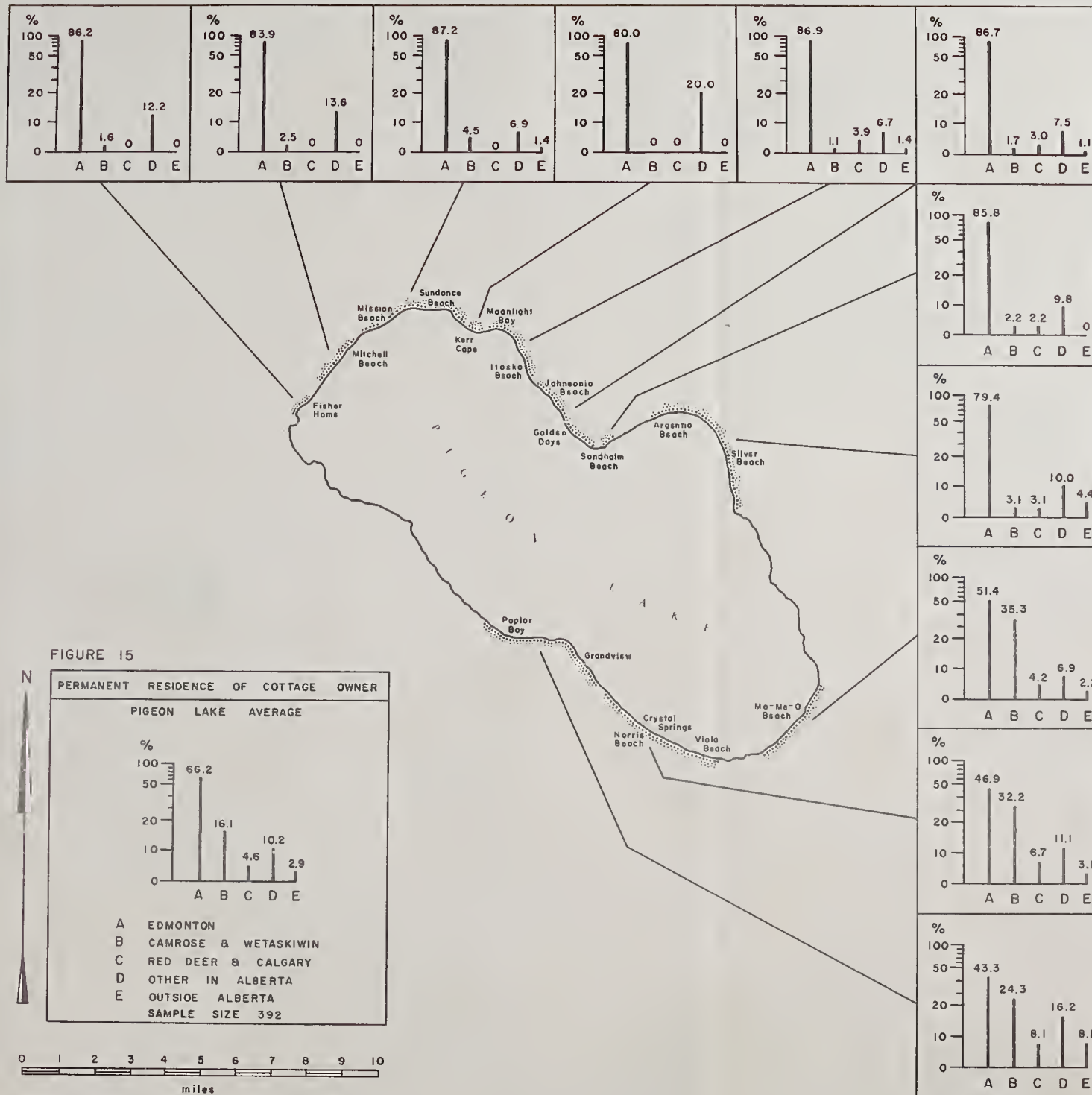
It was stated earlier that in some respects the development characteristics of cottaging are unlike that of urbanization. Nevertheless, there are definite similarities as well. As in a city there are high-income housing areas, medium-income housing areas, and low-income housing areas. In this regard one might expect to find similar relationships with high, medium, and low income cottage groups to that found in a city. This is generally observable in Figure 10 for the Silver Beach, Itaska Beach, and Kerr Cape areas show a definite tendency to have high improvement values, with the Golden Days and Sundance Beach areas

being only slightly lower. On the other hand, the Fisher Home, Mitchell Beach, and Sandholm Beach areas show a distinct tendency to low improvement values, leaving the southern half of the lake from Poplar Bay to Viola Beach to occupy the middle portion of the scale. This latter area shows a wide range of improvements with a substantial number of cottages in the lower improvement value group and a significant number in the higher improvement value group. This tends to suggest that dispersed within the area are a number of very expensive cottages (Plate 11) as well as a number of lower-class cottages (Plate 10).

Permanent Residence of Cottage Owner

It would be expected that the majority of cottagers around Pigeon Lake come from Edmonton, it being the largest city in Alberta (now more than 400,000 people) and situated only 40 miles north northeast of the lake. Indeed, over 66 per cent of all Pigeon Lake cottagers come from Edmonton.

However, as can be seen from Figure 15, a very interesting distributional pattern has developed. The northern half of the lake from Fisher Home in the northwest to Silver Beach in the northeast has a very significant majority of Edmontonians, their concentration ranging from 87.2 per cent



at Sundance to 79.4 per cent at Silver Beach. The southern half of Pigeon Lake has a much lower majority of cottage owners from Edmonton, decreasing from 51.4 per cent at Ma-me-o to 43.3 per cent at Poplar Bay.

At first glance this distribution may appear to be an obvious development with the north end of the lake being closer to Edmonton (Sandholm Beach is approximately 44 miles from Edmonton and one-third of the distance is on gravel road), but the recent opening of Highway No. 2, combined with the paved Highway No. 19 to Ma-me-o has considerably lessened the effective time distance to the southern portion of Pigeon Lake. In fact, it now requires the same time to reach either end of the lake from Edmonton. However, most of the present cottage development was established prior to the opening of Highway No. 2, at which time the northern end of the lake was considerably closer to Edmonton in terms of both distance and time.

Corresponding with the substantial decrease in the percentage of Edmontonian cottage owners along the southern shore of Pigeon Lake is a striking percentage increase of Camrose and Wetaskiwin cottage owners. This of course can be attributed to the combined influences of short distance and almost total accessibility by pavement from these centers.

All the other cottage owner location categories of permanent residence also increased along the southern lake shore but not nearly as much as the increase from Camrose and Wetaskiwin.

The relatively high proportion of "Outside Alberta" cottage owners in the Poplar Bay area (8.1 per cent, the majority of whom belong to the \$13,000 plus income group) is interesting. It is nearly twice the percentage of the nearest rival, Silver Beach with 4.4 per cent). However, according to the Land Capability Classification for Outdoor Recreation, (Figure 3), the Poplar Bay area does not have the high quality of shoreland physical characteristics that one would expect to be the major attraction. The Poplar Bay shoreland is one of rocks and gravel with little or no sand (Plates 8 and 9). On the other hand, the Silver Beach area has a very high quality sand beach excelled on few other lakes in Alberta (Plates 2 and 3). One may now begin to suspect the importance and attractive power of high quality beach development for cottaging. On the one hand, we have people earning a high income, travelling a considerable distance to a cottage and choosing a site that is rated (by the Land Capability Classification for Outdoor Recreation) as

having only moderately high recreation potential when they could well afford a very high capability sand beach site. The quality of the lake itself is the important feature. On the other hand, one can definitely trace the order of cottage development from the high quality beach areas (Class 1), through the lesser quality beach areas (Class 2) to the rocky-till shoreland areas (Class 3). The Class 4 areas of Sandholm Beach and Mitchell Beach do not fit this progression as they are areas that have changed in quality over the years. Cottagers in these areas report better beach conditions in the past, indicating that the water conditions were not always stagnant. The Class 4 rocky-till shoreland area of Kerr Cape does fit the progression.

The very low percentage of cottagers from Calgary, a city having few water recreation resources available to it, was surprising. Sylvan Lake is the only other lake in Alberta south of Edmonton having comparable recreation capability in terms of water quality, water level stability, and physical shoreland features. Although not shown separately on Figure 15, only 0.7 per cent of all Pigeon Lake cottagers reside in Calgary, whereas 51 per cent of

Sylvan Lake cottagers come from Calgary.³ Seventy-one per cent of Sylvan Lake cottagers come from Calgary and Red Deer combined but only 4.6 per cent of Pigeon Lake cottagers come from these two major Alberta cities. It was expected that many would choose Sylvan Lake because it also has a high natural capability to support recreation combined with its more southerly geographic location, but certainly not to the almost complete exclusion of Pigeon Lake.

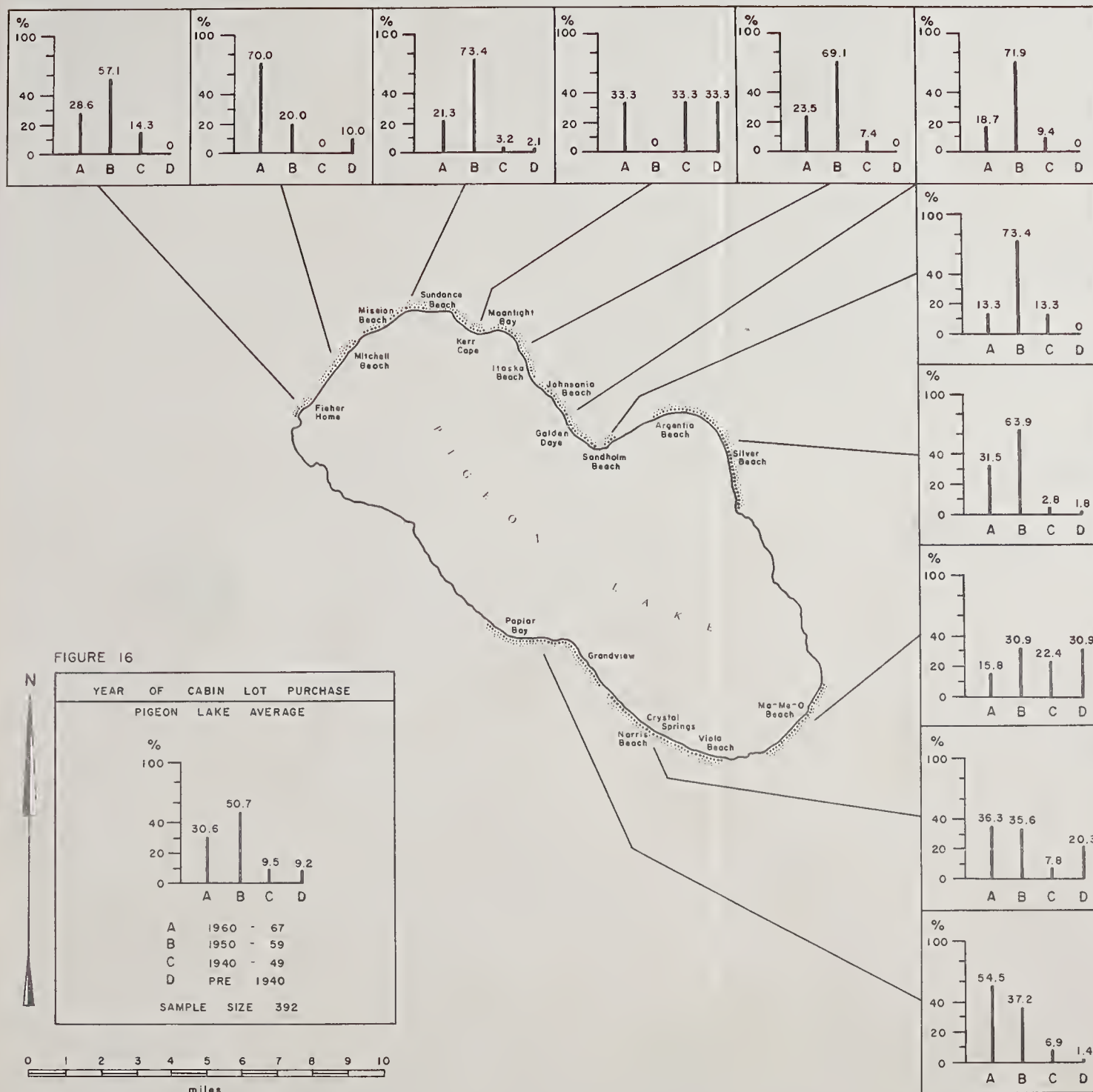
Year of Cabin Lot Purchase

As can be seen from Figure 16, over half the cottage lots on Pigeon Lake were purchased during the period 1950 to 1959 and over 30 per cent during the period subsequent to 1960. This by no means presents the total picture, however, as there are substantial area differences.

Ma-me-o Beach portrays a very even distribution of cabin lot purchase over the years. However, much of the purchase in the more recent years represents a change in ownership rather than an overall expansion in the numbers of cottages. This area has been completely built up with

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Parlby, G.B.H., Recreational Characteristics of Four Central Alberta Lakes, Alberta Department of Agriculture, Economics Division, Edmonton, 1968, p. 39.



first, second, and third row development for a number of years. Kerr Cape shows a similar distribution with the exception of years 1950 to 1959. However, because of the small number of questionnaires which were returned from this study area and, indeed, the small number of cottages in it, it is not surprising that a single time period might show a null response.

The Sandholm Beach, Golden Days, Sundance Beach, Itaska Beach, and Fisher Home areas respectively all have very pronounced maximums of cabin lot purchase during the period 1950 to 1959. Most purchases in these areas can be attributed to expansion. Only Sundance Beach and Itaska Beach areas have complete one row development and even here, only very recently.

The Silver Beach, Mitchell Beach, Poplar Bay, and Crystal Springs areas have experienced a remarkable surge in cabin lot purchase since 1960. In all but the Silver Beach area where there has been considerable changeover of ownership despite available space remaining for cottage expansion, the numbers of "first owners" (question number 7 of cottage questionnaire) would testify to overall expansion rather than rapid turnover.

Priority Order of Improvements

The cottagers were asked to rate by order of priority how they would carry out the following improvements: rebuild the cabin; extend the cabin; install running water; provide better sewerage facilities; improve the site; improve their equipment; or relocate the cottage. The answers are tabulated below.

TABLE IX

Priority Order of Improvements

| Choice | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Total |
|-----------|-----|-----|----|----|---|---|---|-------|
| Rebuild | 16 | 6 | 4 | | | 2 | | 28 |
| Extend | 34 | 12 | 15 | 1 | 2 | | | 64 |
| Water | 64 | 26 | 7 | 1 | | | | 98 |
| Sewerage | 49 | 53 | 11 | 3 | | 1 | | 117 |
| Site | 14 | 7 | 5 | 6 | 2 | | | 34 |
| Equipment | 11 | 11 | 7 | 6 | 2 | | | 37 |
| Relocate | 12 | 1 | 2 | | | | 3 | 18 |
| Total | 200 | 116 | 51 | 17 | 6 | 3 | 3 | 396 |

It is interesting to note that one-sixth did not want to make any changes whatsoever and these were by no means always those who had already made these improvements.

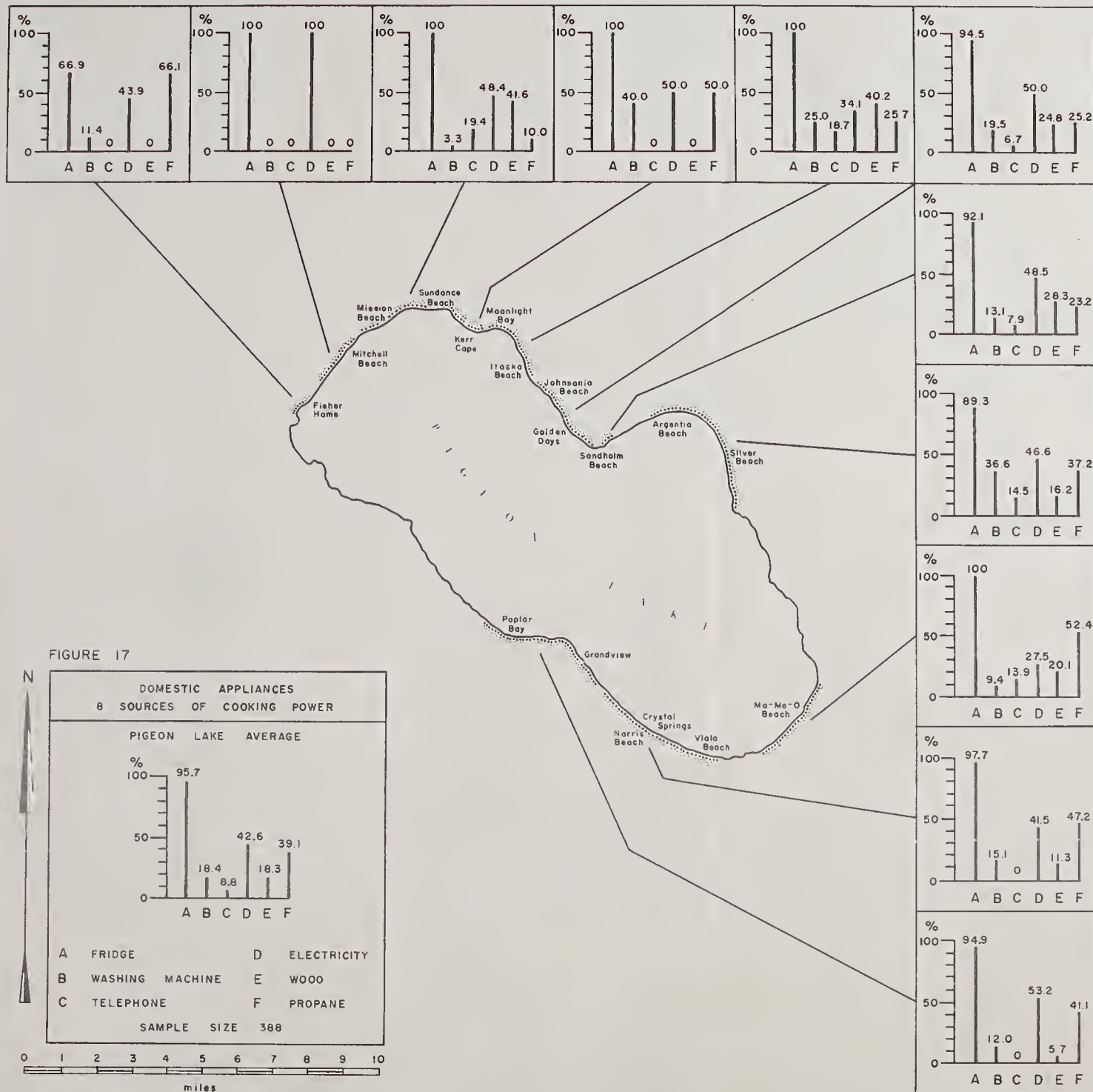
A further two-thirds listed only one improvement. Providing better sewerage and running water were the two improvements that people most wanted and these were followed by a desire to extend the cabin. Thus, given time and money, it would appear that these three aspects will be further developed. Improvements to the site and equipment were evidently considered to be less important though approximately 12 per cent would like to improve these factors. Still fewer wished to take the more drastic step of rebuilding or relocating the cottage and those who wished to do the latter were mainly located in the second row of cottages, and desired a lake front lot.

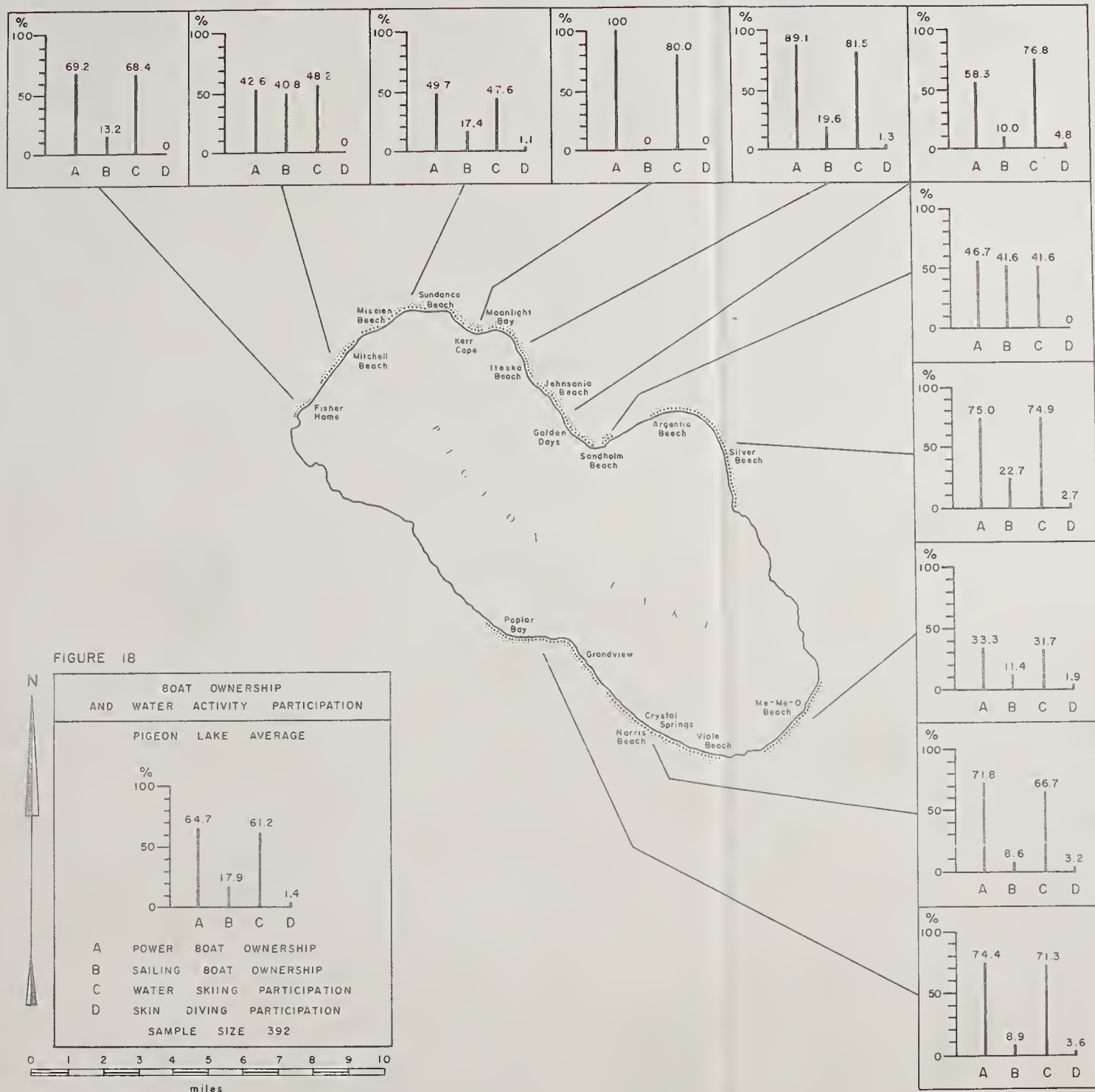
It is also most interesting to observe that over 90 per cent were satisfied with their chosen locations. This could mean that the cottager is content just to have a cottage away from the city or that all the sites available are very suitable for cottaging, or that once he has a cottage, a cottager does not want to concede that the personal choice of site was a mistake. The writer would suggest that each of these plays a part in this stated satisfaction and would wryly add that the benefits of the cottage may often be fully acknowledged after, rather than before, the cottage has been bought.

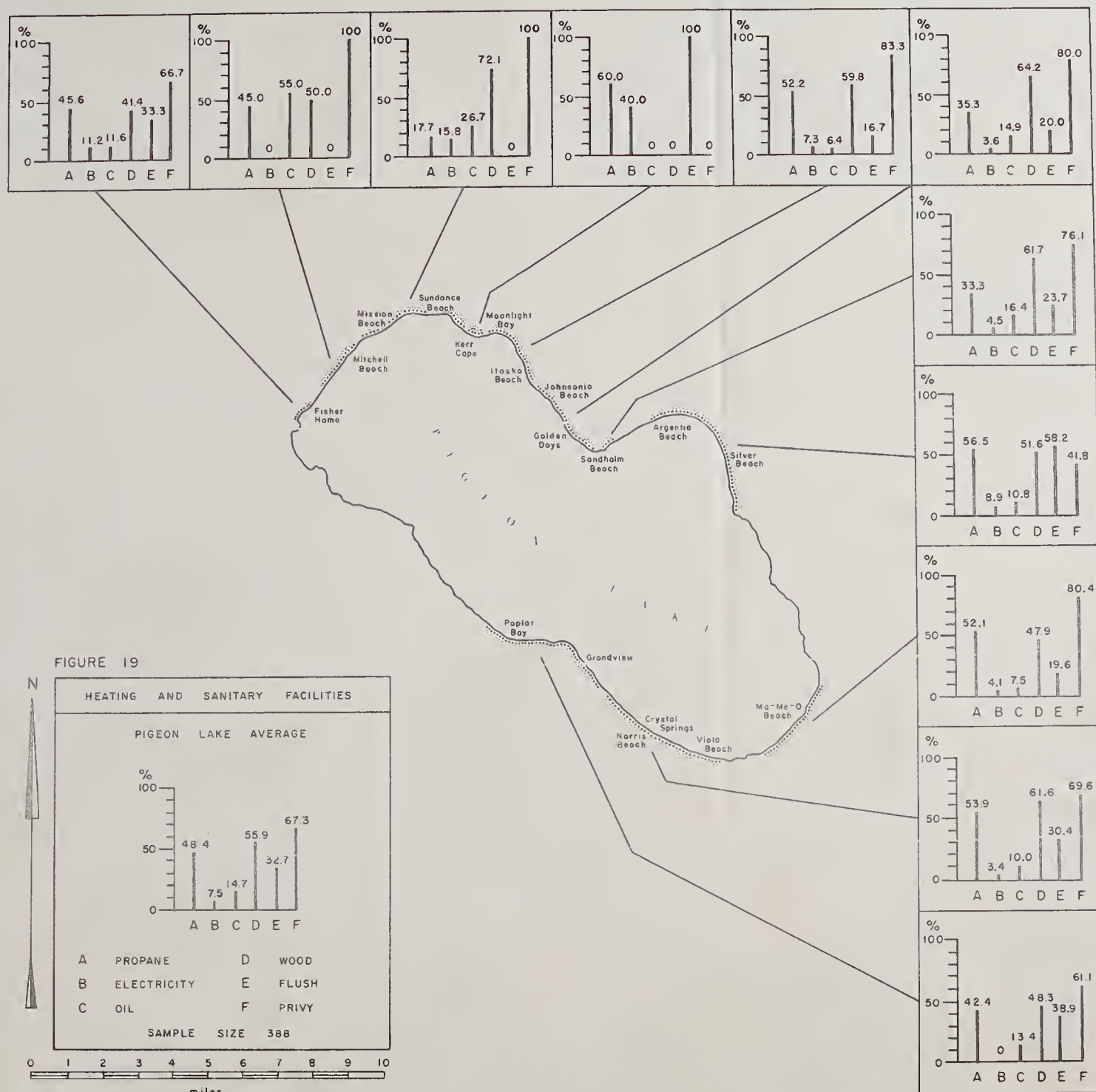
Cottage Facilities

From Figures 17, 18, and 19, it can be seen that a curious combination of modern and pioneer living exists in the summer cottages. Most have a refrigerator, a very consistent fact around the entire lake; well over 60 per cent own a boat; and yet, many are content to use an outside "privy" and, as mentioned earlier in Chapter I, live in the minimum of space.

Power boat ownership has a wide variation in distribution ranging from a low of 33.3 per cent at Ma-me-o Beach to a high of 100 per cent at Kerr Cape. In this regard, it is interesting to compare Ma-me-o with Silver Beach and Itaska Beach. All three areas in addition to having intensive cottage development, have similar physical characteristics with an excellent sand beach and a shallow offshore gradient, the latter being a situation that would appear to discourage boat ownership because of the necessity of building long piers for launching. However, Ma-me-o has far less than half as many power boat owners as either of the other two cottage areas. The reason obviously lies with the very intense public use and the numerous public access rights to Ma-me-o Beach as compared to the very exclusive private use of the cottage development beach







areas at Silver Beach and Itaska Beach.

Furthermore, the suspicion of shallow offshore gradients discouraging boat ownership obviously does not hold true for Pigeon Lake. As can be seen from Figure 18, the Silver Beach and Itaska Beach areas have the highest percentage of power boat ownership (with the exception of Kerr Cape) despite their shallow offshore gradients. In addition, Mitchell Beach and Sandholm Beach have even shallower gradients than Ma-me-o and yet have considerably higher percentages of cottagers owning power boats.

It may be seen from Figure 19 that 55.9 per cent of the cabins are heated by wood fires, but in many instances these supplement or give way to propane heating and, to lesser extents, oil heaters and electricity. In 18.3 per cent of the cabins wood stoves are also used for cooking (Figure 17) but electricity is more often to be found in this instance since many electrical appliances are portable and may be used both at home and at the lake. Propane is also an important source of cooking power especially for the non-portable appliances. Telephones and washing machines were only to be found in 8.8 per cent and 18.4 per cent of the cottages respectively.

Sewerage and water facilities have to be provided by the cottage owners themselves. Flush toilets have been installed in 32.7 per cent, the highest percentages being found at Silver Beach (58.2 per cent) and Kerr Cape (100 per cent). Elsewhere privies are used, being carefully controlled by the Department of Health to protect well-water supplies. Twenty per cent of the cottagers have their own wells, while others share their neighbour's so that 55 per cent of the cottages have tapped water. In the remaining instances water is drawn from a public pump or brought from home. Only 1 per cent use the lake for household water.

A visual attempt was made to compare the statistics appearing on Figures 17, 18, and 19 with age and income of cottage owner. However, there appears to be no correlation. Excepting the case of Kerr Cape, the higher income and old age cottagers seem to "rough it" as often as the lower income and young age groups.

Attitudes

Since the attitudes of people vary from group to group within society and since these groups do tend to take up differing cottage areas, it is natural that the

attitudes of the cottagers in these differing areas will be similarly variable. It is hoped that the following pages will offer some insight into the various attitudes of cottagers as they view their chosen form of recreational activity. With this approach we may be able to place certain values on the importance of land capability (according to the Land Capability Classification for Outdoor Recreation) in the choice of cottage site.

The questions that arise are, "What dictates the cottager's selection of cottage site?", "How does the cottager select a site?", and "What does the cottager like and dislike about his site location?".

Reasons For Owning a Cottage

In the O.R.R.R.C. Report on Wilderness Users it was found that one of the major reasons for going into remote areas was to escape urbanization.⁴ Similarly, it appears that cottagers view their cottages as an escape from the congested city. Nearly 56 per cent of the cottagers around Pigeon Lake stated their primary reason for owning

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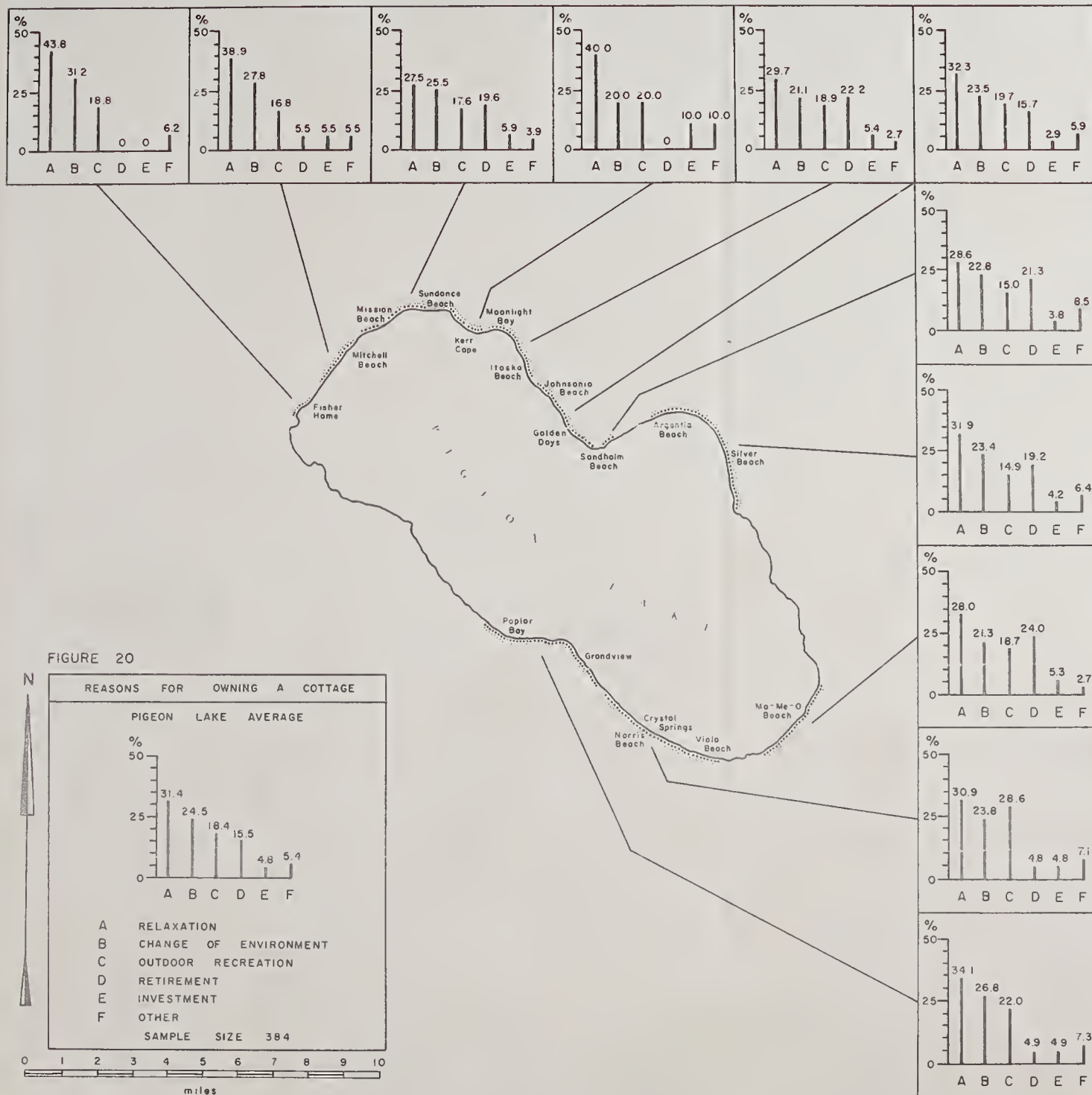
U.S., Outdoor Recreation Resources Review Commission, Wilderness and Recreation, Washington, D.C., Study Report No. 3, 1962.

a cottage was either relaxation (31.4 per cent) or a change of environment (29.5 per cent) (Figure 20). This desire to escape from urban conditions is additionally affirmed by the significant proportion of cottagers who stated that they especially liked the tranquillity and seclusion associated with their cottage (Figure 22). It seems that many people consider their cottage as a refuge from the hustle and bustle of city life. Such qualities, however, are generally realized and appreciated subsequent to site selection.

The reason for buying a cottage may be related to status in society but there can be little doubt from the comment on the questionnaire responses that provision of a natural environment for children is a strong motivating force. Some even suggested that the cottage provides a medium for strengthening family ties.

By whatever procedure the cottager may arrive at a decision to build or buy a cottage, it would appear that he has certain general criteria on which to base his selection of site.

The reasons why people want to cottage would seem to have certain relationships to their adopted locations, although occasionally these reasons are surprising. For



example, of all the cottage areas around Pigeon Lake, Ma-me-o Beach most closely parallels suburban development and might well be defined as a suburban cottage area. However, these cottagers still emphasize their rejection of the city as their major reason for buying a cottage, although they do so to a lesser extent than other cottage areas.

Conversely, some of the reasons are not at all surprising. Retirement can be very closely related to the age structure of the various cottage areas. The Poplar Bay, Crystal Springs, Kerr Cape, and Fisher Home areas all have low percentages of people buying cottages for the primary reason of retirement and have correspondingly low percentages of cottage owners over age 65. Mitchell Beach is the only, but very prominent, anomaly.

Mitchell Beach has begun to develop very peculiar relationships between the comparative factors thus far discussed and they have now compounded to a state that warrants some explanation. In this cottage area 25 per cent of the cottagers are over age 65, 70 per cent have purchased their cottage since 1959, and yet only 5.5 per cent claim that their primary reason for buying a cottage is for retirement. The first and easiest answer to this

problem is that the data are incorrect. However, there is a more elaborate explanation that may have some merit.

Because the total number of cottages at Mitchell Beach is relatively small in comparison to other cottage areas around Pigeon Lake, the sample responses were correspondingly low, ranging from 12 to 18 for the questions now under discussion. Consequently, little effort was required to investigate this anomaly. The inquiry not only verified the data as being correct but brought to the fore three strongly inter-related factors.

The people over age 65 who claim not to be retired are in fact business owners and are only semi-retired. They are active people and have chosen to rely on hired help to continue their business operations. This allows them to continue to be involved in something constructive to society and at the same time does not demand their full attention and devotion on the job. Added to this situation is the fact that all of these cottage owners are in the income bracket earning less than \$9,000 per annum. They felt that, in addition to not requiring particularly good shoreland conditions for water oriented activities, they could not afford the better cottage sites around the lake. The stagnating water conditions at Mitchell Beach solved

their dilemma. Previous owners began selling at prices the present owners could afford.

When asked the second time as to why they purchased a cottage they persisted in emphasizing relaxation and change of environment but it did become quite apparent that it was in view of the extra amount of time they now had available to themselves.

The majority of cottage owners (95.2 per cent) around Pigeon Lake do not buy a cottage for investment. Although not depictable in Figure 20, the majority of those people that do buy cottages for investment are in the 35 to 50 age group. There does not appear to be any relationship between investment and physical capability of cottage area. For example, Kerr Cape has 10 per cent of its cottagers buying for investment reasons and the physical situation is a steep, rocky shoreland; Sundance Beach with 5.9 per cent, Fisher Home with none, Poplar Bay with 4.9 per cent, and Crystal Springs with 4.8 per cent, all have rocky shorelands; Ma-me-o Beach with 5.3 per cent, Silver Beach with 4.2 per cent, and Itaska Beach with 5.4 per cent are on excellent quality sand beaches; and Sandholm Beach with 3.8 per cent and Mitchell Beach with 5.5 per cent both have mucky, low-gradient shorelands with stagnant water

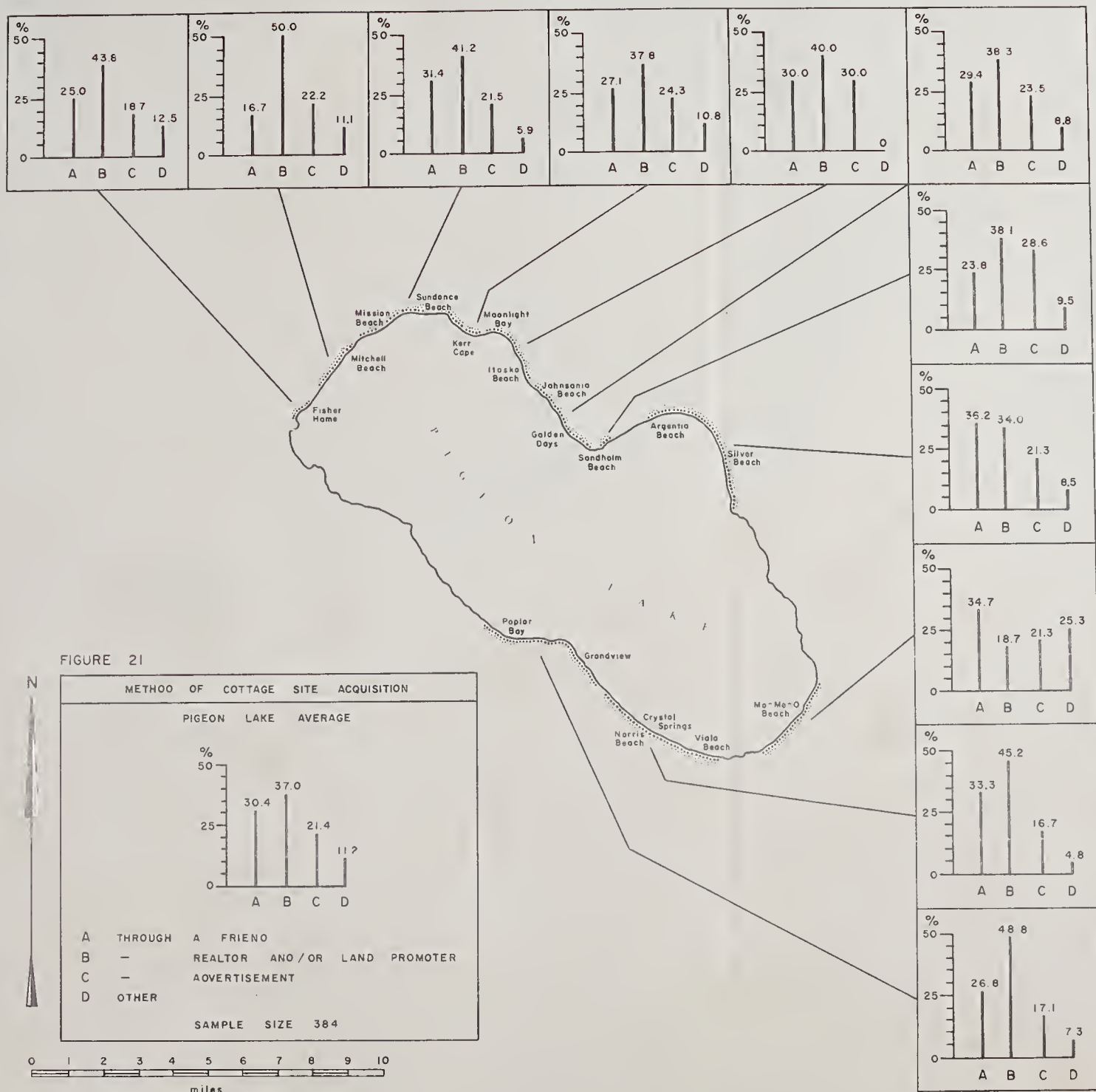
conditions.

Although outdoor recreation is considered by many as an important reason for owning a cottage, it is interesting to note that it places only third in the order of preference. The Crystal Springs and Poplar Bay cottage areas had the highest proportion of owners who gave this as their chief reason; both are areas which have younger age populations and a greater percentage of power boat owners than the Pigion Lake average.

Method of Cottage Site Acquisition

The various methods of site acquisition may be deduced from Figure 21. Real estate promotion predominates over other methods of transaction around Pigeon Lake. Indeed, only at Silver Beach and Ma-me-o Beach do other methods of sale exceed real estate. In both cases internal transactions between friends was the most common method.

The transaction which occurs between friends rather than through salesmen is a very good second to the realtor as a method of site acquisition. This would appear to confirm that to many people it is not a decision of "where to locate", but "if to locate". It would appear that the number of possible locations is relatively unknown to many



of the potential customers and their final decision to locate in a specific location is often merely secondary to their decision to buy a summer cottage.

Advertisement is also an important method and is quite consistent around the entire lake, ranging from 16.7 per cent at Crystal Springs to 30 per cent at Itaska Beach.

In the Itaska Beach area it was surprising to find that 70 per cent of the cottage lot sales were by means of real estate and advertisement combined despite the very high capability of the area. One might expect that close friends of present cottage owners would be more effective buyers. On the other hand, such top quality cottage sites may very well demand high prices.

"Other" methods of sale is also a relatively consistent factor around Pigeon Lake. Ma-me-o Beach is peculiar with the very high percentage of 25.3 per cent. In addition to the significant number of responses indicating inheritance or purchase from family, substantial numbers of sales result from "on the spot" requests to sell.

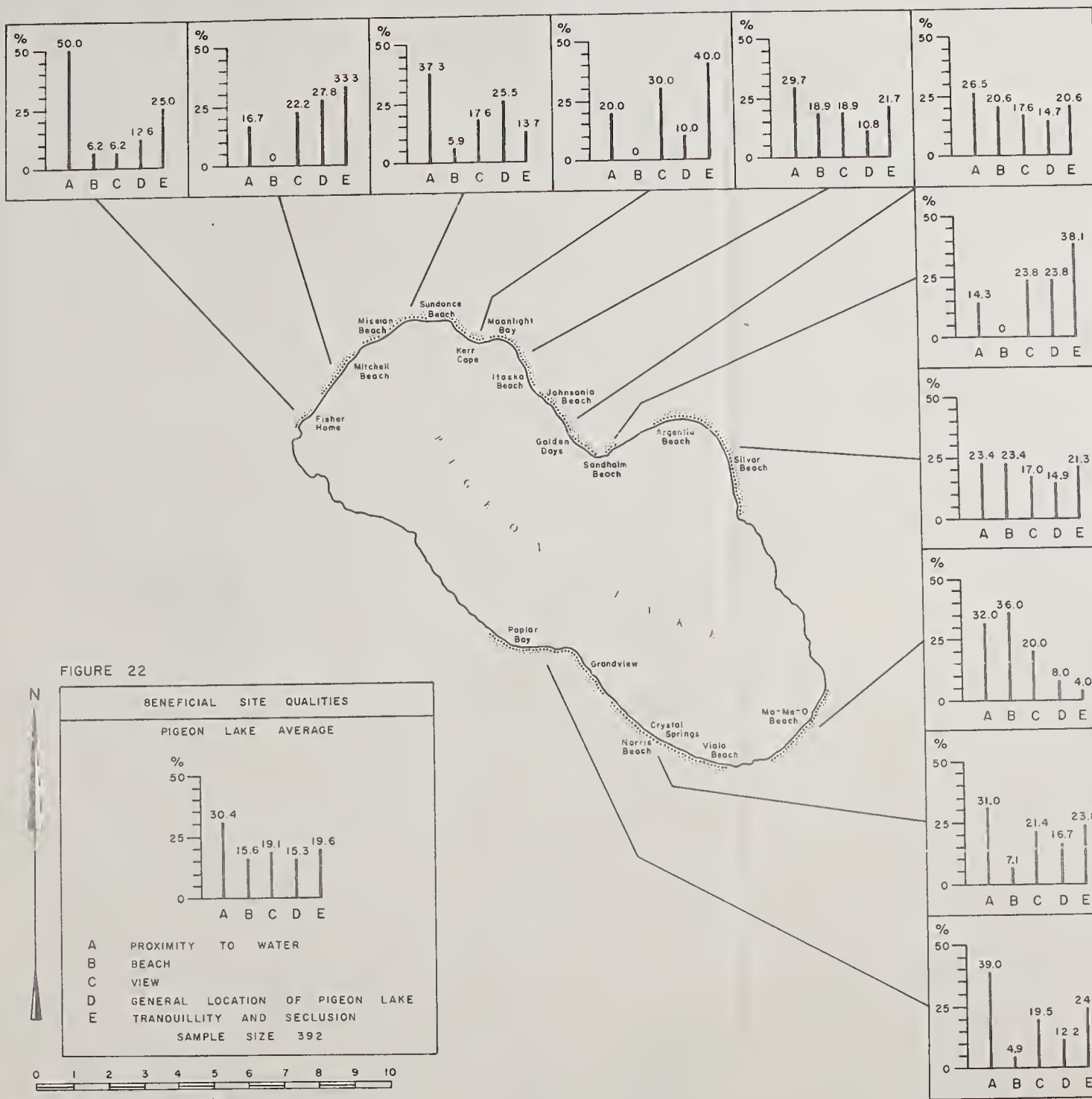
It is interesting to relate the picture portrayed in Figure 21 to that of the city of Edmonton. In an urban setting, real estate becomes, without question, the largest property sale promoter handling 75 per cent of all

home purchase transactions.⁵ This is followed by advertisement which is undoubtedly handicapped by the fact that in the majority of cases a real estate company is already involved and commission is paid. Sales through friends and other methods are almost non-existent.

Beneficial Site Qualities

Without a doubt, cottagers desire property near water. A study of the Pigeon Lake Average graph of Figure 22 illustrating Beneficial Site Qualities will verify this. However, less than a third of the cottagers name this feature as the most beneficial site quality and a further glance at the eleven cottage area graphs will indicate a wide variation in preference. Secondly, tranquillity was noted, and the third choice was the view offered by the cottage sites. The significance of tranquillity and the view is logical since the cottager is attempting to induce a pastoral atmosphere into his otherwise urban life. Consequently, the setting in which this recreational play is set is of extreme importance.

Initially, it may seem surprising that only 15.6



per cent cited the beach as the primary beneficial site quality considering the fact that there are 6.4 miles of Recreation Land Capability Class 1 sand beach shoreland and 3.2 miles of Class 2 sand beach shoreland around Pigeon Lake. However, as will be pointed out later, this percentage was almost entirely located within Itaska Beach, Golden Days, Silver Beach, and Ma-me-o Beach, where in fact the majority of the Class 1 and 2 sand beach areas exist.⁶ Furthermore, in all these areas the other beneficial site qualities were very significant.

Only 15.3 per cent of the cottagers cited the general location of Pigeon Lake as being the primary beneficial site quality, but in referring back to Figure 15, it is very noticeable that most of the Pigeon Lake cottage owners live within a one hour's drive of the lake. The whole of Edmonton is included in this area if one measures the time of journey from the city limits.

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The Class 1 area on the northern end of Pigeon Lake is a Municipal Park. The Class 2 area on the west side of the lake is a Provincial Park. The Class 2 area on the east side of the lake between Silver Beach and Ma-me-o Beach and the Class 2 area on the south end of the lake between Viola Beach and Ma-me-o Beach are located on the Pigeon Lake Indian Reserve and are not accessible. These four areas do not support cottage development.

In several cases, a close correlation can be drawn between the physical shoreland characteristics and the differing preferences in beneficial site qualities.

Firstly, in the four areas of Poplar Bay, Crystal Springs, Fisher Home, and Sundance Beach where proximity to water has a wide majority of preference, the physical shoreland is one of rock and boulder till (Plates 8, 9, 10, 11, 12, 13, 14, and 15). Little or no sand is present, and where present it is of poor quality and must be cleared of existing rock (Plates 11 and 15). This condition can be further substantiated by the very low percentage of cottagers in these four areas indicating the beach as a beneficial site quality. In all but the Sundance Beach area, tranquillity and seclusion is indicated as the second beneficial site quality. This can be related to the fact that all but Sundance Beach have unobstructed lakeshore frontage. Sundance Beach is unfortunate in having an access road located between the front row cottage development and the lakeshore. Despite this road being blocked at several key points, traffic is still considerable and when the roads are dry there is a serious dust problem. For the cottage owner it is most unpleasant to have dust and dirt blown into the cabin: for the road

user and pedestrian, constant use of the road creates almost a fog and reduces visibility drastically. It is further interesting to note the second beneficial site quality preference of "General Location of Pigeon Lake" at Sundance Beach in comparison to the other three areas. As mentioned earlier, the majority of cottagers do come from Edmonton (especially in the case of Fisher Home and Sundance Beach), and in this regard the northern end of Pigeon Lake does have some advantage over the southwest side of the lake.

Secondly, in the four areas, Ma-me-o Beach, Silver Beach, Golden Days, and Itaska Beach, where the beach is the first, or at least a very significant preference, the physical shoreland is one of very good to excellent sand beach (Plates 1, 2, 3, 4, 5, 6, and 7). It should be noted that although only 18.9 per cent listed the beach as the primary beneficial site quality at Itaska Beach, this is still a very high percentage in comparison to the 0 per cent to 7.1 per cent preferences indicated at the seven other cottage areas around Pigeon Lake.

Thirdly, at Kerr Cape where the tranquillity and seclusion strongly supported by the view offered at the site, are the predominating preferences, the physical shoreland

is one of rock boulders, steep offshore and foreshore gradients, and elevated backshore conditions (Plate 16). Relatively few cottages exist in this area, the reason most likely being the very difficult and expensive building conditions. Under these circumstances the Beneficial Site Quality graph for Kerr Cape is most logical.

Such correlations between physical shoreland characteristics and Beneficial Site Quality preferences cannot be used to explain the situations that exist in the remaining two areas of Mitchell Beach and Sandholm Beach (except in the very low priority the beach holds). Tranquillity and seclusion and the view are not related at all to the low gradient offshore, foreshore, and backshore conditions. However, the preferences indicated by the graphs may be related to the age structure and income of the cottage population and the type of activities in which these people are likely to take part. Older people may tend to be more passive in their activities and be more appreciative of the tranquillity and seclusion, to relax in front of their cabin and enjoy their lake-side view, and to be more particular about their travelling distance from home.

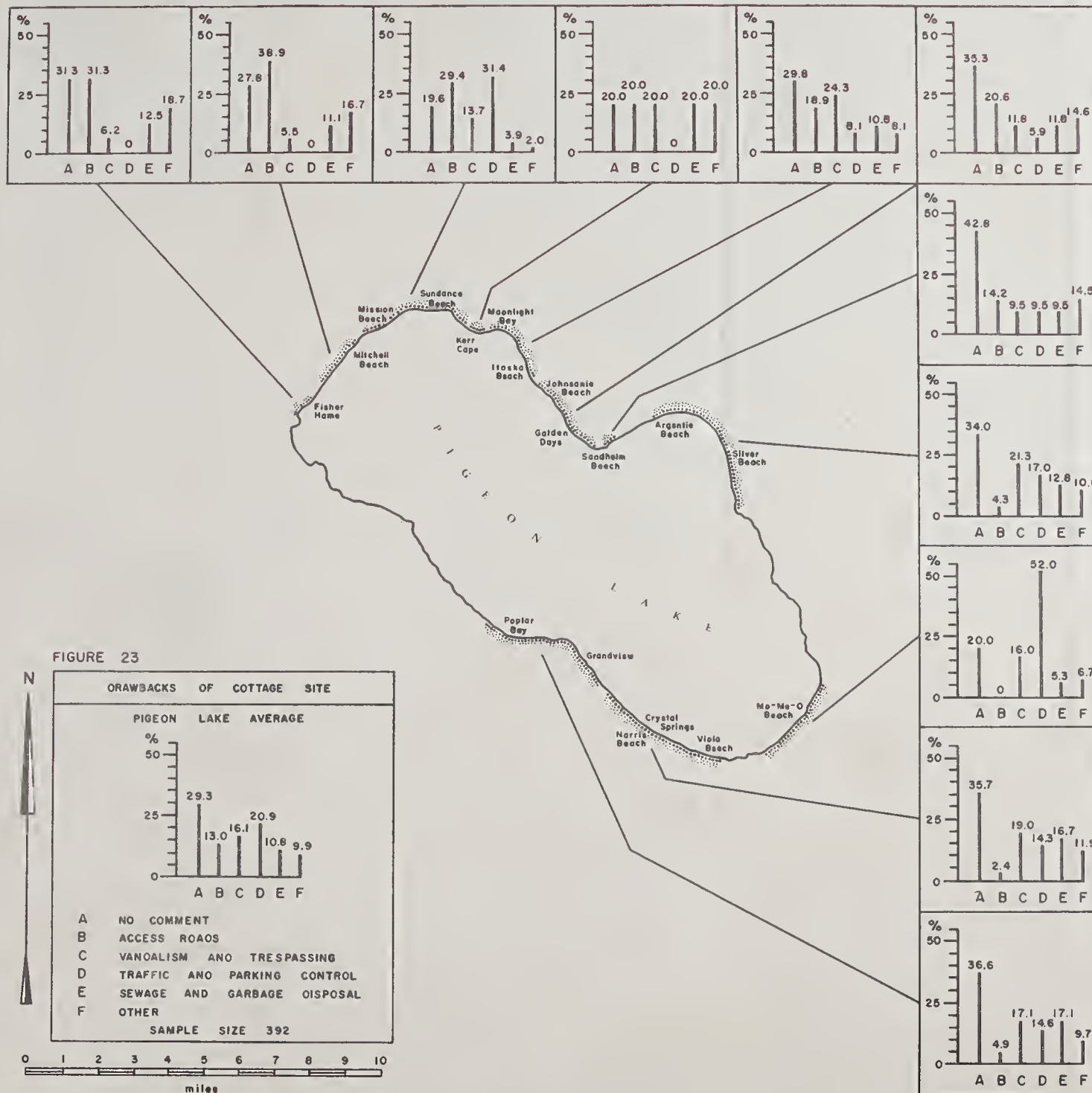
Drawbacks of Cottage Site

Although many could not express themselves on the drawbacks of the cottage site, Figure 23 illustrates that the drawbacks do have certain area differences that at least partly relate to the development characteristics of the cottage areas.

Traffic and parking control stand out as the most prominent cottage site drawback but it is extremely variable around the lake. Ma-me-o Beach and Sundance Beach are the only two areas that indicate above average complaint on this matter. One might very well expect such complaints from these two areas; Ma-me-o Beach with a suburban and commercial type development, an active dance hall, and the Ma-me-o Beach Provincial Park; and Sundance Beach with the access road paralleling the lake shore between the lake and the front row cottage development.

The Silver Beach, Crystal Springs, and Poplar Bay cottage areas also have significant numbers complaining about traffic control.

Related to this and ranking third as a major complaint around Pigeon Lake, is access. This is not so much in terms of the feasibility of present access but refers to the type of road being provided. The roads are



not paved but consist of graded dirt. As mentioned earlier, this causes a serious dust problem when the roads are dry. The road along the southwest shore is particularly bad, since its position diagonal to the township roads means a considerable saving in travelling time. Consequently, it is used by local traffic all year round. Many of those people using the lake would like the roads to be paved, while others argue that this would only encourage more traffic and for the traffic to speed. Where this situation is not accepted it is tackled in different ways. At Ma-me-o Beach the summer village council arrange for roads to be oiled. A few individuals follow suit in other areas by oiling the stretch of road outside their cottage. If carried out several times in the summer this is very effective in eliminating the dust but brings the menace of oil and dirt in its place. Along the southwest side of the lake from Poplar Bay to Viola Beach large holes left (or cultivated) in the road prove effective in reducing speed and dust. Lastly, Sundance Beach has blocked the beach road at several key points, so restricting access along the lake shore and creating several cul-de-sacs. The Battle River Regional Planning Commission have suggested a scheme of the construction of a secondary road network around the lake. This would cater to the fast and through traffic

while the minor resort roads would act only as access routes to the cottage developments.

The invasion of privacy by people (the general public) through vandalism and trespassing is the second most common complaint (16.1 per cent) of Pigeon Lake cottagers. It is this phenomenon which discourages cottagers from moving away from the "suburban cottage clusters". It is quite evident that the backwoodsman and the cottager have little in common these days. There seems to be a positive relationship between the trespassing and vandalism complaints and the higher income cottage areas of Poplar Bay, Crystal Springs, Silver Beach, Itaska Beach, and Kerr Cape. The relatively strong trespassing and vandalism complaint at Ma-me-o Beach (16.0 per cent), especially in view of the very strong overshadowing effect of traffic and parking control problems present in this cottage area, is important. It is suspected by the writer, however, that this does not take the form of theft so much as pedestrian trespassing and the general accessibility of the beach made available to the public.

Sewage and garbage disposal complaints rank fourth in the order and is the most consistent complaint around Pigeon Lake. Ma-me-o Beach and Sundance Beach are the

only areas having low percentages of complaints in this regard. In both cases it is most likely due to the more serious problems of traffic, road conditions, and vandalism. Ma-me-o Beach can be further justified by its urban-like development which has a regular garbage disposal pickup. Obviously, the general lack of conveniences is looked upon as a disadvantage by the average cottager. Although he may strongly desire certain non-urban amenities, he does not want these at the expense of excessively harsh living conditions.

CHAPTER III

SUMMARY AND CONCLUSIONS

From the point of view of resource use, it has often been implied that cottaging is an inefficient or less intensive recreational use of land than public use. However, from the foregoing analysis of the research data, it is now apparent that cottaging is indeed an intensive use of land. Under the climatic conditions found in Alberta (a short summer season which might offer only a few weekends of warm sunshine weather), it may be as intensive or even more intensive than public use, depending on the amount of secondary row cottage development one wishes to consider. With only very limited amounts of secondary row cottage development, cottaging on Pigeon Lake is generating 4.1 user days per linear foot per annum. Ma-me-o Beach, which has incomplete second and third row development, is generating 6.6 user days per linear foot per annum. Itaska Beach, which has some second row development, is generating 5.1 user days per linear foot per annum. By contrast, the public beach at Zeiner Park, on the northwest end of Pigeon Lake, is generating 4.7 user days per linear foot

per year. Zeiner Park was chosen for this comparison because of the accurate recording of visitors, the absence of the crowding influence of cottage and commercial development, and direct access to its own high capability sand beach.

Private cottage recreation, however, provides recreation opportunity for only a small segment of the total population. Cottages are in reality a second home and are therefore a luxury item. Public recreation areas, on the other hand, provide recreation opportunity for a much larger segment of the total population.

The conclusion drawn from this conflict of user interest is not the promotion of more cottage areas or more public areas in general, but for the promotion of the most rational and logical use of the land resources available. To accomplish this, two important points must be considered:

(1) People are the central theme in planning. What is planning for if it is not for the benefit of people?

(2) What are the capabilities of the (land) resources in terms of the best interests of people?

In light of this we first realize that many areas around Pigeon Lake are not suitable for public beach use.

These include all areas except the Recreation Land Capability Class 1 and 2 sand beach areas. They will find there most intensive use by the most numbers of people in cottage development.

The sandy beach areas, however, are suited to both public beach use and cottaging. If properly planned, these areas could accommodate both types of use with minimal interference to one another. Since these areas are of prime interest to the public and since the public involves the greatest numbers of people, development should accommodate their interests first. Cottage development can then take place around the public beach and public backshore areas. It seems unjustified and impractical to allow cottage development to effectively control publicly owned natural resources that are of primary interest to the public majority.

Furthermore, the differing physical shoreland conditions around Pigeon Lake do not account for the differences in the amount of use a cottage receives. Johnsonia Beach, a Recreation Land Capability Class 2 area, averaged only 246 user days per cottage per year. Mitchell Beach and Kerr Cape, two Recreation Land Capability 4 areas, averaged 314 and 320 user days per cottage per year respectively.

The cottage itself and its proximity to water suitable for boating and swimming are the important factors. The quality of the beach area is often only of secondary importance.

The fact that it is the presence of a suitable body of water which is of overriding importance to the cottager may justify a change of inventory emphasis when classifying shoreland for cottaging (map symbol N) for the Canada Land Inventory Land Capability Classification for Outdoor Recreation. Inventory emphasis should often be on water capability as well as land capability, rather than just land capability.

Cottaging around Pigeon Lake is a family oriented summer recreational involvement. Much time (13.3 hours) is spent outside, mostly around the cottage (6.3 hours) and in or on the water or on the beach (5.6 hours). The users participate in three categories of recreation activity: beach oriented activities, lake oriented activities, and cottage site oriented activities. Beach activities are predominant at Pigeon Lake, but there are distinct differences from study area to study area in this respect that are directly related to the type and condition of the physical shoreland. At the sandy beach areas most time is

devoted to beach activities with successively less time being devoted to lake and cottage site activities. In most rocky-till shoreland areas the order of decreasing use is lake, beach, and cottage site activities, while for the shallow gradient, stagnant water areas the order of use is cottage site, lake, and beach activities.

The cottagers' opinion of the shoreland was also directly related to the physical shoreland conditions, although personal experience (exposure to shoreland areas elsewhere, small children in family) obviously affected some of the opinions. The sandy beach areas received the majority of the "good" reports, the rocky-till areas the "average" reports, and the shallow gradient, stagnant water areas the "poor" reports. No lakeshore frontage was claimed by 7.7 per cent of the cottagers.

Although there was a direct relationship between the value of land per lot and the physical shoreland conditions, there was no relationship between the value of improvements and the physical shoreland conditions. In many cases, the value of improvements is related to income.

The cost of owning and operating a cottage on Pigeon Lake averages \$1,637.00 per annum. This is almost half the average income of Albertan males (Table VIII). It would seem

unlikely that people would ever devote as high a proportion of their income to owning a cottage as that. This belief is supported by the observation that the great majority of Pigeon Lake cottage owners earn more than \$5,000.00 per annum.

Most cottagers come from the city. Indeed, 86.9 per cent of Pigeon Lake cottagers live in the five Alberta centres of Edmonton, Camrose, Wetaskiwin, Red Deer, and Calgary. The cottager wants to go anywhere which is suitable for cottaging within reasonable access from the city. There is a definite relationship between access (distance from home to cottage) and visitation rate.

He cottages primarily for relaxation, a change of environment, and outdoor recreation. He most often acquires the site through a realtor or land promoter, although nearly one-third of the transactions are informal arrangements through a friend. He basically wants a site with a range of conveniences, although not all the conveniences and appliances of home are important. As was mentioned earlier proximity to water is of primary importance.

The last finding of significance is that the cottagers are almost always satisfied with the site they have chosen irrespective of the differing physical shoreland conditions on which cottages are located around Pigeon Lake. On the other hand one problem was found attached to ownership

of a cottage, again irrespective of location, and that was liability to invasion of the cottager's privacy by the general public.

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APPENDICES

APPENDIX A

COVER LETTER AND COTTAGE QUESTIONNAIRE



July, 1967

Dear Cottage Owner:

I am a graduate student in Geography attending the University of Alberta in Edmonton. My field of research is a study of cottaging on Pigeon Lake. I would be most grateful if you would take twenty minutes of your time to complete the enclosed questionnaire. All information will be kept confidential. An early reply will be appreciated.

Thank you very much for your co-operation.

Appendix A

Cottage Questionnaire

1. Lot _____ Block _____
Plan _____ Municipality _____
2. Home Address _____

3. Age _____ 4. Income _____ 5. Occupation _____
6. When did you purchase your cottage? _____
7. Are you the first owner? _____
8. Is your cottage on a waterfront lot, second row lot, or
third row lot? _____
9. What does it cost you to own and operate your cottage in terms
of the following?
Taxes _____ Depreciation _____
Interest _____ Equipment _____
Mileage to and from cottage _____
Maintenance of cottage _____ other _____

10. Given free choice, write by order of priority the improvements you would like to carry out.

Rebuild cabin_____

Improve site_____

Extend cabin_____

Improve equipment_____

Running water_____

Relocate_____

Sewage disposal_____

11. How long does it take to reach your cottage?_____

12. Which route do you use travelling from home to lake?_____

13. During which month do you visit your cottage?_____

14. Approximately how many times do you travel to your cottage in one season?_____

15. Average annual use:

continuous_____weeks; occasional_____days.

Adults_____Children; Adults_____Children_____.

16. When you visit your cottage in what outdoor recreational activities do you take part? Rank in order of time spent on each activity: _____

17. Attempt to estimate the percentage of a weekend you spend in the following locations:

| | |
|---|-------|
| Inside the cottage (including sleeping) | _____ |
| On the lot around the cottage | _____ |
| On the beach | _____ |
| In or on the water | _____ |
| On the shoreland | _____ |
| Travelling to and from the cottage | _____ |
| Total | 100 |

18. On an average day how many hours do you spend in the following locations?

| | |
|-------------------------------------|----------|
| Inside cottage (including sleeping) | _____ |
| On the lot around the cottage | _____ |
| On the beach | _____ |
| In or on the water | _____ |
| On the shoreland | _____ |
| Total | 24 hours |

19. Services: Where do you get the following:

| | |
|----------------------|-------|
| Food | _____ |
| Gasoline | _____ |
| Automobile servicing | _____ |
| Boat servicing | _____ |

20. What local services do you use regularly? _____

21. Do you have the following domestic appliances?

Fridge _____

Washing Machine _____

Telephone _____

22. Source of cooking power:

Electricity _____

Wood _____

Propane _____

23. Source of heat:

Electricity _____

Propane _____

Oil _____

Wood _____

24. Sanitary facilities:

Flush _____

Privy _____

25. Do you own or participate in the following:

Power Boat _____ H.P. _____

Sail Boat _____

Water-skiing _____

Skin diving _____

26. How do you rate the quality of your beach?

Good _____

Average _____

Poor _____

No frontage _____

27. Are you satisfied with your present site? _____

28. What do you like about your cottage site (in order of importance)?

Proximity to Water _____

Beach _____

View _____

General Location of Pigeon Lake _____

Tranquillity and Seclusion _____

Other _____

29. What do you dislike about your cottage site(in order of importance)?

Access Roads _____

Vandalism _____

Tresspassing _____

Traffic and Parking Control _____

Sewage and Garbage Disposal _____

Other _____

30. How did you find your cottage site?

Through a realtor and/or land promoter _____

Through advertisement _____

Through a friend _____

Other _____

31. Why did you acquire a summer cottage?

Outdoor Recreation _____

Change of environment _____

Retirement _____

Relaxation _____

Investment _____

Other _____

APPENDIX B

NUMBER OF COTTAGES AND QUESTIONNAIRE RESPONSE - PIGEON LAKE

APPENDIX B

NUMBER OF COTTAGES AND QUESTIONNAIRE RESPONSE - PIGEON LAKE

| Cottage Area | Total No. of Cottages | Questionnaire Response | | | | |
|--------------------|-----------------------|---|-------------------|-------------------|------------|-----------------|
| | | Questions: 1,2,5,6,7,8, 10,11,12,13,14,15,16,17, 18,19,20,25,26,27, 28 & 29 | Questions 21 & 22 | Questions 30 & 31 | Question 3 | Questions 4 & 9 |
| Fisher Home | 24 | 16 | 16 | 16 | 10 | 10 |
| Mitchell Beach | 28 | 18 | 18 | 18 | 12 | 12 |
| Sundance Beach | 156 | 51 | 51 | 49 | 42 | 42 |
| Kerr Cape | 20 | 10 | 10 | 9 | 5 | 5 |
| Itaska Beach | 99 | 37 | 35 | 37 | 30 | 30 |
| Golden Days | 98 | 34 | 34 | 33 | 28 | 28 |
| Sandholm Beach | 28 | 21 | 21 | 21 | 15 | 4 |
| Silver Beach | 152 | 47 | 45 | 46 | 41 | 41 |
| Ma-me-o Beach | 184 | 75 | 75 | 73 | 68 | 68 |
| Crystal Springs | 125 | 42 | 42 | 42 | 36 | 36 |
| Poplar Bay | 126 | 41 | 41 | 40 | 35 | 35 |
| Pigeon Lake Totals | 1040 | 392 | 388 | 384 | 322 | 311 |

Total number of questionnaires mailed = 1040

Total number of questionnaires returned = 392

Percentage response = 37.7 per cent

